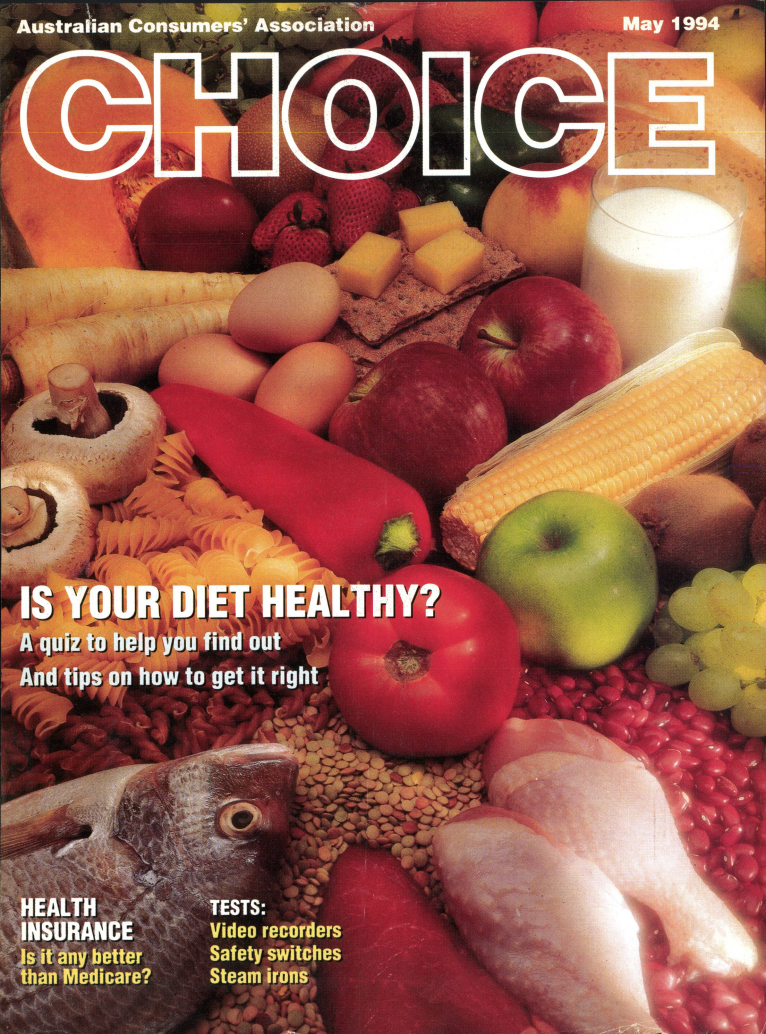
Australian Consumers' Association

May 1994

CHOICE



IS YOUR DIET HEALTHY?

A quiz to help you find out

And tips on how to get it right

HEALTH INSURANCE

Is it any better than Medicare?

TESTS:

Video recorders

Safety switches

Steam irons

Consumer rights: the basics are universal

WORLD CONSUMER RIGHTS DAY, on March 15, was celebrated this year with a bang. After 10 years of preparation and groundwork, the African office of the International Organization of Consumers Unions (IOCU) became a reality.

Almost 150 consumer advocates gathered from across the African continent not only to witness the opening of their long-awaited Regional Office in Harare, Zimbabwe, but to take the unique opportunity to attend the first Regional Conference for Africa.

As Treasurer of the IOCU Executive I represented Australia on this significant occasion. The consumer movement in Africa faces enormous hurdles, but has already made important strides in achieving protection for consumers from unsafe products and unfair practices.

The consumer movement there is very diverse — some organisations in the southern and eastern parts of the continent were formed more than 30 years ago, while others have only emerged with the recent change in political climate which has encouraged more vivid and free expression of citizens' opinions. Their issues and concerns are similar to ours — safe food, good health services, safe products that perform properly, access to redress and to justice and so on. But while the problems are similar, these organisations face many worse hurdles than we do in trying to solve the problems — significant poverty, high illiteracy rates, poor telecommunications systems and, in some areas, unsympathetic or actively hostile governments.

The development and entrenchment of a democratic culture based on the rights of people to participate in their governance is a central tenet of the work of most of Africa's consumer groups, irrespective of the specific issues they are currently working on. There is a strong sense that democracy is one of the best guarantees of consumer protection and that getting the UN Guidelines on Consumer Protection enacted in legislation in their countries goes hand in hand with their ability to speak freely and criticise governments and business.

While there is an impressive array of law on the statute books in Africa, most of it goes unenforced. In too many cases, the attitude of governments has been that 'substandard supplies are better than no supplies'. This has been fertile ground for many of the world's multinational corporations to indulge in unethical trade practices and dumping of unsafe goods. Government economic policies, such as the structural adjustment programs insisted upon by the World Bank, have added major problems of access to basic services like water and sewerage, especially for the poorest members of the community.

With an African office of IOCU now established and lots more attention to consumer issues in the media, the continent is firmly on the path of ensuring that consumer issues are high on governments' agendas, and that the laws to protect the interests of the consumer truly touch the lives of ordinary people.

Who are we?

CHOICE exists to help you make decisions about products and services. The reason you can rely on it is that the only interests we represent are yours — the consumer's.

We're not a government department or agency, and we get no ongoing funding from any government. Neither do we receive any subsidies from industry, manufacturers, unions or any other group, and we don't take any advertisements in the magazine. CHOICE survives purely because people like you subscribe to it: over 85% of our income is from CHOICE subscriptions, and the rest from sales of our Consumer Bookshelf and CHOICE Books, plus some special technical services such as testing appliances for their energy efficiency labelling. So we're independent in the true sense of the word: beholden to no-one but the consumers we represent and who keep CHOICE alive.

The organisation behind CHOICE is the Australian Consumers' Association. This does more than just publish CHOICE: the 70 or so people who work here don't all have a public face, but they're all working for consumers in some way. You can become a member of the Consumers' Association as well as a CHOICE subscriber if you wish. The small extra membership fee you pay demonstrates your commitment to the rights of consumers, and gives you a subscription to a second magazine — either *Consuming Interest*, our publication covering broader consumer policy, or *CHOICE Travel*.

CHOICE and the Consumers' Association play an important role in Australian society. We're here because you think you need us, you trust us and you're prepared to pay to keep us going.

Louise Sylvan
Chief Executive Officer

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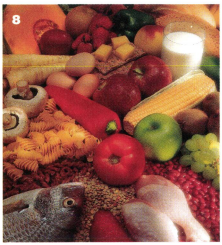

Cover photo: Kent Mears

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We asked subscribers if they were happy with their health funds — and how they compared with Medicare for service. We also wanted to know what people thought they were paying for when they took out private insurance, and whether they got it.

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Every home should have one — or more than one. We tested the new, cheaper plug and adaptor types of safety switch, and found some which offer protection from electrocution in more situations than the others.

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July, August, September

Tests: Vacuum cleaners, peanut butter, chainsaws, exterior paint, oven cleaners, strollers, mobile phones, washing machines, supermarket diet meals.
Surveys: Annual CHOICE survey of supermarket prices; public transport: which towns and cities around Australia offer the best service?; childcare — what do parents want, and what are they getting?; how satisfied are you with your bank's service?
Features: Contact lenses; mailing lists; disclosure of life insurance commissions; credit card options; information about food — cutting through the waffle; appliance servicing; planning and buying a fitted kitchen.

Labelling

Made in Australia, yet imported? — Another confusing label.

WHERE DO I COME FROM?

PLACE your bets in yet another country of origin guessing competition.

This time we're looking at the wrapper from a Nestlé Milky Bar. On one side of the packaging we read "Made in Australia. Nestlé Confectionery Ltd...". But wait just a minute! Turn the packaging over and we read "Imported by: Nestlé Singapore (Pte) Ltd ... Nestlé China Ltd ..."

Which piece of information can the consumer believe? Brand manager Jennifer Powell says, in this instance, the product is manufactured in Australia at the Nestlé plant in Lane Cove, Sydney.

So why is there information about an importer on the wrap? According to Powell, the Milky Bar is exported to Singapore in the same packaging and Singapore authorities quite properly require the product to be labelled accordingly.

Milky Bar buffs concerned about buying Australian can rest easy. But, this is yet another example of how confusing country of origin labelling can be for consumers.

Correction

WHAT DO YOU KNOW?

CHOICE, December 1993

In the answer to question 3 on page 47, we stated that a union membership card would not be accepted as an identification document by a bank if you were opening a new account.

Austrac, the Australian Transaction Reports and Analysis Centre, provides the banks with a list of the types of identification document which can be accepted towards the 100 points signature verification process for opening a new account. The Austrac list states that secondary identification documents like credit cards or membership cards (including union membership) can be used and are worth 25 points.

In addition to secondary identification documents, the actual records of professional or trade associations of which the signatory is a member can be used and are worth 25 points.

Weight loss programs

BETTER DEAL FOR DIETERS?

IF you want to lose weight you should soon be able to expect a better deal from companies providing weight loss programs. Australia's weight loss industry has taken steps to improve its business practices in light of a major report by the National Weight Loss Industry Consultative Committee.

The Consultative Committee, which was formed a year ago, has produced a final report which recommends that the industry establish a national association to oversee a program of self-regulation. So far executives from Gloria Marshall, Jenny Craig and Weight Watchers have agreed to form a national association.

That association will be responsible for ensuring companies abide by a voluntary industry Code of Practice which has been drafted by the Consultative Committee.

The Code of Practice sets down guidelines for common areas of contention between weight loss companies and their customers, such as advertising and sales practices, contractual agreements and guarantees, the supply of price information, processes for screening potential customers with health problems, refunds and dispute resolution mechanisms.

The Consultative Committee has recommended that the weight loss industry be given a year to make significant progress towards self-regulation. At the conclusion of that year, the Committee will reconvene to assess the industry association's performance.

If the Committee finds the industry hasn't made adequate advances towards successful self-regulation, it intends to recommend uniform national legislation to have a mandatory code of practice for all weight loss programs.

Weighty matters: the new self-regulation process for the weight loss industry should give it a better image.

Fire safety

SELLING LIKE A HOUSE ON FIRE

THE recent bush fire emergency in NSW saw many people taking swift action to reduce the chances of their home going up in flames. According to fire authorities, one of the first priorities is to clear all gutters of leaves, twigs and accumulated debris. It's not hard to see why. Such materials make ideal kindling and are easily ignited by floating embers from fires even some distance away. Once alight, they are perfectly positioned to send flames up into the roof cavity, one of the major causes of house destruction in bushfires.

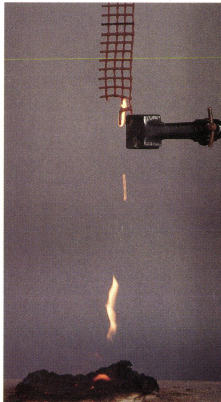
Several products on the market are claimed to combat this problem and minimise the painful chore of regularly removing such debris manually from gutters. Essentially, they are simple mesh screens which are installed in the gutter. Water passes through, leaves and twigs are caught and, it is presumably hoped, blow away afterwards. The trouble is, according to an Adelaide reader, Jack Benlow, what they in fact do is build up over time to form a ridge on top of the mesh.

A far greater concern to Mr Benlow, however, and we share it, is that the product he bought came with a label claiming it "reduces fire hazard". Whatever its leaf-catching abilities, the product itself is made of plastic and is flammable! In a quick test we carried out, it burned unaided after a couple of seconds' exposure to flame. Just the thing to raze the rafters in the event of a bushfire, you might think. The NSW Fire Brigade agrees. Ken Bryant of the fire prevention section said anything combustible in house guttering represents an increased risk, so he could not recommend using such a product.

Dr Caird Ramsay conducts bushfire research for the CSIRO. He pointed out that if the product was made of polypropylene plastic, it might tend to melt before it ignited. However, in bushfire conditions, the presence in guttering of melted plastic along with other flammable material like leaves and twigs could be the worst kind of combination. Leaves would enable the plastic to ignite and keep burning where it might otherwise be reluctant to do so.

A spokeswoman for the manufacturer of this particular product told us this potential hazard had never been drawn to its attention before. After testing a piece of the material herself, she agreed it did in fact burn quite readily. She said if it proved to be a concern, the company was quite prepared to take any necessary action. This could include looking at alternative materials or perhaps printing warnings on the packaging that the product should not be used in bushfire-prone areas. She said the current packaging doesn't carry any claims that the product "reduces fire hazard", though it may have done in the past. The sample we bought didn't carry the claim.

Be aware that there are several similar products on the market and they may not all be made of this same type of plastic. If you have such a product or are considering installing one, our advice is to subject it to a simple 'match test' yourself. Hold a flame to a small piece of the material. If it catches fire, it is, in Dr Ramsay's words, "not the sort of thing you want in your guttering" in a bushfire area.



Flammable Super Gutter Guard — "not the sort of thing you want in your guttering" in a bushfire area!

Phony charges?

DON'T CALL HOME WITH IT

YOU'RE OVERSEAS in a transit lounge waiting for your flight and you spot a phone that accepts credit cards. Just pick it up, 'swipe' your card through and let them know how late your plane is going to be. Handy? Undoubtedly. Risky? Apparently.

Consider the shock that Professor Elliot Forsyth of North Balwyn, Victoria, received along with his Visa card account after his daughter made a 10 minute call (9 minutes, 51 seconds, to be precise) to home from Amsterdam last August. He was charged $139.93 for the call which, even at operator-assisted rates through Australian Telecom, would have cost no more than $28.90. The PTT (Dutch Telecom) charges for such a call would come to around $25. The difference is the gross profit margin of the company which owns the phone.

The phone in question displayed no up front information about the charges, so it might seem reasonable to assume normal rates or something close to them would apply. It might also seem puzzling to be told, as we were by a spokesperson for Visa, that it's the cardholder's responsibility to know the tariffs applying to transactions. Visa will look into billing errors, but if there is no mistake in calculating charges, they are deemed to be 'correct', even if they are outrageous.

This is not an isolated case. On a European trip last year, Bruce McLaren of Melbourne also fell into this nasty hi-tech tourist trap. A keen AFL follower, he slipped his credit card into a phone while in London to find out important football information from a friend in Melbourne. This seemed so convenient he repeated the exercise on several other occasions during the trip, but was horrified when his bill arrived to find he'd been charged hundreds of dollars for the calls.

The phones in these instances did not belong to the telephone carrier of the country in question, but to a company called 3 C Communications. It appears to be a 'value-added service provider', though it seems to add value chiefly to its own profit line.

Telecom says it has received other complaints about credit card phones overseas. Deregulation is now the telecommunications watchword, not only in Australia, so many private pay phone operators are flourishing in markets where they can charge what they like, provided they can get people to pay. The credit card phone seems to be an ingenious approach to this problem: simply don't notify the charges up front. The phones in all the above cases were situated in high-volume tourist locations: the British Museum and Heathrow Airport in London, the Van Gogh Museum in Amsterdam and so on.

In Australia, Telecom public phones that accept credit cards feature a screen display of

the charges being incurred while the call is in progress. This would seem the minimum required by principles of fair trading.

When travelling overseas you can take a Telecom Telecard or an Optus Calling Card. Both enable you to make calls and have them charged back to your home or business account at the rate the call would cost from Australia. Surcharges apply to each call (40 cents for direct dialling; $3 for operator-assisted calls), but 3 C Communications makes that look like a real bargain. The most Professor Forsyth's daughter would have incurred for her $140 call using these cards would have been $15.60 for Optus and $18.54 for Telecom, direct dialling. Calling at Australian off-peak periods would yield significant reductions on these amounts.

As for credit cards, in the absence of any information about what you will be electronically charged for phone calls or any other service, we suggest you leave them safely in your pocket.

BORROWING TO BUY SHARES

If the recent strength of the share-market has you thinking about investing in shares, think twice before you borrow money to buy them.

Unfortunately not all financial institutions are encouraging consumers to be cautious about borrowing money to buy shares. Citibank, for instance, recently ran the following advertisement in a major daily newspaper: "Use your home to invest in shares".

The advertisement was promoting the idea of using Citibank's Mortgage Power product to convert the equity you hold in your home into a line of credit. "Depending on how much equity you have in your home, you may already be entitled to a line of credit from $41 000 upwards."

The advertisement does tell customers to contact a financial adviser to find out how the investment strategy can work. In small type the advertisement also says, "Prior to investing you should obtain independent expert advice." However, small print is not good enough for such important information.

It is essential to obtain independent financial advice before buying shares. It is an understatement to say that borrowing money to invest in the sharemarket is an extremely high-risk and high-cost strategy. This approach to becoming a shareholder is not for the average punter. Talk to an independent fee-for-service financial planner first.

WOMEN AND SUPER

THE Office of the Status of Women (OSW) held a seminar in Canberra recently to discuss ways to make superannuation more accessible, suitable and beneficial for women.

Many women work on a casual or part-time basis, are employed at low levels in organisations, earn less than average weekly earnings and take breaks from employment. Each of these factors means many women have not benefited significantly from enterprise/employer-based superannuation schemes.

Unpaid workers, the majority of whom are women, are precluded from being members of super schemes altogether.

Unless the government addresses the mismatch between women's circumstances and the nature of superannuation, many women will remain dependent on the pension in old age.

The OSW seminar focused on developing possible solutions and new policy directions to address these issues. Participants included representatives from the various arms of the superannuation industry, government and the consumer movement.

The most important strategies discussed at the seminar included:

- The need to establish a publicly run central superannuation fund which would enable people to stay in the one fund regardless of how many times they change employer or industry. The central fund would have low fees, thus preventing small deposits from being eroded by fees and charges.
- The need to restrict the fees being charged by existing funds and the abolition of exit penalties so that consumers can withdraw their money from an unsatisfactory superannuation scheme without being penalised.
- The government should explore giving low-income and casual workers the option of taking small superannuation contributions as cash or in the form of higher wages. People also need easy access to their super contributions in times of hardship, including family breakdown.
- Several speakers at the seminar produced evidence which showed there is a strong correlation between financial security in old age and home ownership. With this in mind, the government should give consumers access to their super money to fund the purchase of their first home.
- The seminar also stressed the need to maintain and improve the age pension and to make it universal to ensure no one — income earner or not — slips through the gap.

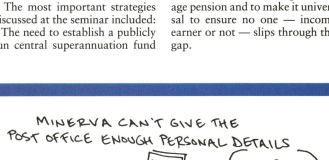
PRIVATE BOX?

READERS who found our article *What price public information?* (CHOICE, February 1994) alarming reading might share the concern of Dr JE Binnie of Kyogle in NSW. He has retained a post office box in that town for around 40 years. In that time all that has been required of him is an annual rental payment. Someone popped a reminder note in his box once a year requesting the due amount and he paid it on his next visit.

This year is different, however. Only days after reading our article, Dr Binnie was confronted by a form requesting personal details to assist with the "updating and computerising" of private box records. Lots of details. These included his name, box number, address, business name, business address, home and business phone and fax numbers and the names of others to receive mail addressed to his box.

The form also asked him to supply the category of his business, choosing from an attached list of 48 categories with numbered codes. He is mystified as to why such information is necessary now, since it has never been needed before, and worried that such data collection is done with a view to building mailing lists and lists of phone and fax numbers which might then be sold to marketing companies. He returned the form largely blank and awaits developments.

A spokesperson for Australia Post told us Dr Binnie has nothing to worry about. He said most of the information requested was only consistent with what's asked for these days on all new applications for PO boxes. Australia Post is in the process of installing a computer program throughout Australia for record keeping and invoicing related to PO boxes. While the program is the same in every office, the computers are not linked so there is no question of forming a central database, he said.


MINERVA CAN'T GIVE THE POST OFFICE ENOUGH PERSONAL DETAILS
AND PAGES 12→16 TACKLE MY HIGH SCHOOL YEARS...
AUSTRALIA POST
mik

The application form for a new box in fact only requires a name, residential address and phone number (in the event of a problem like your mail being uncollected for weeks) for private boxes — the additional information is only obligatory for businesses.

You don't *have* to supply any other personal or business details in order to obtain a private PO box. The form Dr Binnie received — an initiative of his local post office — didn't make this clear. If you have any objection to giving such details when applying for a PO box or updating your post office's records, don't.

WARNING ON ROYAL JELLY

WHEN FED TO A BEE LARVA, royal jelly turns it into a queen rather than a worker bee. Humans take it as a 'health tonic' or rejuvenator or miracle cure for a number of conditions. But at best such claims have not been substantiated — "You might as well eat jelly beans," said one doctor we spoke to. At worst royal jelly can trigger a life-threatening allergic reaction.

Following reports of 11 cases of severe allergic reactions to royal jelly — including the death of an 11-year-old girl — royal jelly products must now carry warnings. The Therapeutic Goods Administration (TGA) has worked with the National Food Authority to come up with the following labels:

- For food products consisting entirely of royal jelly: "Warning — Not recommended for asthma and allergy sufferers as it can cause severe allergic reactions."
- For therapeutic products where royal jelly is combined with other ingredients: "Warning — this product contains royal jelly and is not recommended for asthma and allergy sufferers as it can cause severe allergic reactions."

Earlier this year products were voluntarily recalled at the wholesale level, and existing stock should have now been given warning labels. Whether or not a royal jelly product carries a warning, anyone with a history of asthma or other allergies like hay fever should avoid it. This is true even if you've used royal jelly a couple of times before without adverse effect; it can take two exposures to sensitise your body — the third exposure could be the serious one.

The young girl who died because of an allergy to it had taken royal jelly ampoules at least twice before. The second time she developed a wheeze but this wasn't taken seriously. On her third exposure she took a 'double strength' capsule containing 500 mg of royal jelly. After 20 minutes she developed severe diarrhoea, bronchospasm and difficulty in breathing.

Royal jelly consists largely of proteins and water — a research team at Melbourne's Alfred Hospital is investigating just which proteins cause the problems. The TGA is mostly concerned with ingested royal jelly, taken as a 'health tonic'. Cosmetics containing royal jelly are also available and we'd recommend avoiding those too if you're an allergy sufferer.

Different forms of packaging for royal jelly. When we bought these products in late March, none of them carried a warning to asthmatics, but in future they should.

ETHICS: MOTHER AND FOETUS — WHOSE RIGHTS?

SHOULD A PREGNANT WOMAN be forced to have a caesarean in the interests of her foetus?

John Seymour, Reader in Law at the Australian National University, is asking this and other questions as part of an inquiry into foetal welfare and the law, sponsored by, among others, the Australian Medical Association (AMA). "There's been tension in the delivery suite, with doctors wondering what their legal situation is. It's an anticipatory exercise in view of what's been happening in the UK and the US," he says.

He presented his initial findings at a conference in Sydney earlier this year, shaping his argument around three models:

- He quickly dismissed the first model — "The foetus is part of the woman's body; flesh of her flesh" — as far too simple: "A foetus is more than just an organ like a kidney." A striking difference is its ability to live independently eventually.
- "The foetus has a distinct identity requiring legal protection" has often been the medical point of view — with talk of two patients. Advancing technology, allowing us to monitor the foetal heart and 'see' the foetus with ultrasound, reinforces this idea of a separate identity. But if a foetus has legal rights over its mother, does that mean it has a legal entitlement to antenatal care or to certain behaviour standards from its mother while she's pregnant? And if it didn't receive these, could it later sue its mother?
- The third model, "Not one but not two", grows out of the rejection of these first two for being oversimplistic and unhelpful. It states the foetus has a sufficiently separate identity that in some circumstances the law will recognise its interests — but not when they override those of the mother. Just how this could operate in practice has yet to be worked out.

UK law states a foetus can't sue its mother except in the case of motor accidents where an insurance company will be paying up. Already, in both the UK and the US, courts have been ruling on an extreme case — whether a pregnant woman can be forced to have a caesarean — with decisions on both sides of the fence.

Dr Seymour's research is due to be published by the AMA in the middle of the year. Although it won't have legal standing, Dr Seymour hopes it will be a valuable contribution to the foetal rights debate — it may also recommend changes to the law. Already it has stirred interest, with several politicians requesting copies as soon as it's published. We hope to see a clarification of the law for the benefit of doctors and parents-to-be alike: delivery suites are not the place to make complex ethical decisions.

HEALTHY EATING

A balancing act

You know the theory, but how easy is it in practice to eat healthily? What are the problem areas and how can you fix them?

WE PERSUADED 10 VOLUNTEERS to record every single item of food and drink which passed their lips over a 10-day period; these records provided a snapshot of their eating habits. Their weak points illustrate some of the things that might also be wrong with your diet, and we give some suggestions for how to fix them.

Too much fat

Most of our volunteers ate too much fat, like most Australian adults. In fact excessive fat is the greatest of all dietary problems for Australia and most other western countries. Eating too much fat is a major factor in heart disease. Fat is also very high in energy (kilojoules) — a significant factor when you consider that according to one study, 32% of Australian women and 43% of men are overweight. Obesity is believed to be a contributing factor in many health problems including diabetes, high blood pressure and some cancers, including ovarian cancer and gall bladder cancer.

On average, 37% of the energy in the Australian diet comes from fat, compared to the target of below 30%. Where does this fat come from? Fried food is an obvious source; fats added as salad dressings and butter and margarine are others. A less visible proportion is eaten in meat and in cooked foods such as pies — where the pastry may contain a high level of fat — and cakes and biscuits. Chocolate and cheese are also high in fat.

Of our volunteers, Neill was one of several with a high fat level (34%) for the 10 days. On average he ate 67 g (about 13 1/2 teaspoons) of fat a day. Some of the fatty items he ate included a generous rib-eye steak (170 g) which provided him with 14 g of fat; a cheese snack contained 21 g, while a pizza provided 36 g and a slice of cake 20 g. A meat pie gave 26 g of fat and cream on a dessert another 25 g. For Neill's energy intake of 7430 kJ a day, he should ideally be eating less than 60 g of fat; cutting back on pies, cakes and cream would do it.

Our 10 volunteers: the weak points in their diets illustrate some of the things that might be wrong with yours too.

Fats come in many forms: saturated, monounsaturated, polyunsaturated and trans fat. Saturated and trans fats appear to be more of a health hazard than the others, with a link to heart disease. No more than 10% of energy should come from saturated fat. For more information on fats, including trans fat, see 'Trans fat — what's that?' in *Bodywise*, CHOICE, January 1994.

Trans fats are found in hydrogenated vegetable fats (such as margarine) and are thought to act in the body like saturated fats. Saturated fats tend to be in the hard animal fats, including butter. Of our volunteers, only Helen's diet — vegetarian — was low in saturated fat. Christopher is thinking about cutting back on fast foods and chocolate in an effort to reduce his fat intake; this will also reduce his saturated fat ratio.

WHAT IS A HEALTHY DIET?

DECIDING WHAT CONSTITUTES A HEALTHY DIET IS NOT EASY. Individuals' needs vary, so targets aimed at whole populations may not always be suitable for assessing an individual's diet; and different health authorities never seem to give the same advice. Here we explain what criteria we used to assess our volunteers' diets.

A healthy diet satisfies two criteria:

- It contains **enough** fibre and a number of micronutrients (things we need in tiny amounts) including vitamins and minerals to maintain a healthy body. Some of these amounts are expressed in terms of a recommended dietary intake (RDI) — the intake of a nutrient that's estimated to be adequate to meet the known nutritional needs of practically all healthy people.
- It is **balanced** in terms of fats, carbohydrates and proteins — substances referred to as macronutrients.

When we analysed the diets of the 10 volunteers for this article, we took these two criteria into account and referred to a number of schemes which provide tools for assessing diets, or for educating people in correct eating choices.

The five food groups

The Five Food Group plan from the Commonwealth Department of Human Services and Health is the only nationally accepted set of criteria of what constitutes a healthy diet. It recommends a daily number of servings from foods of all five groups: bread and other cereals; vegetables and fruit; meat and meat alternatives; milk and milk products; butter and margarine.

In their correct proportions, these foods will provide about 5000 kJ (1200 calories): less than the energy needs of many people. The gap can be made up with extra foods. Good choices are extra fruit and vegetables, bread and cereals. Not so good but more common choices include cakes, biscuits, snack foods.

The dietary guidelines for Australians

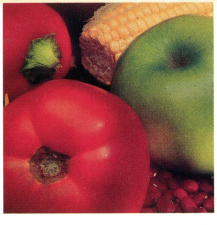
These were devised by the National Health and Medical Research Council (NHMRC) to address general dietary needs:

1. Enjoy a wide variety of nutritious foods.
2. Eat plenty of bread and cereals (preferably wholegrain), vegetables (including legumes) and fruits.

Continued overleaf

To cut down on fat:

- Cut down serving sizes of foods containing fat. For instance, if Neill restricted himself to a 100 g steak instead of 170 g, he would save around 6 g of fat.
- Avoid fried foods; choose low-fat cooking methods such as grilling and steaming instead.
- Avoid large serves of cream and cheese.
- Watch your intake of cakes and biscuits.
- Trim visible fat off meat.
- Try spreading a little less butter or margarine on your bread or crackers, or better still, try buying fresh bread and eating it without butter.
- Choose low-fat dairy products such as low-fat or skimmed milk.



Not enough complex carbohydrate

None of our 10 volunteers ate enough complex carbohydrate in terms of energy it contributes to the total diet, which should be 40 to 50%. Foods which are high in complex carbohydrate tend to be 'good' in other ways too: low in fat and high in fibre. Like any of the food types expressed in terms of energy contribution, it's a question of balance: if some figures are high, others must be low.

For many of our volunteers the best way to right the balance would be to cut back on protein, sugar (simple carbohydrate) and fat and eat more foods such as bread, rice, pasta and potatoes. Lentils and some beans — for example, baked beans — also provide significant amounts of complex carbohydrate. For instance, although Alison's complex carbohydrate percentage was one of the highest, at 32% it's still below the 40 to 50% we're advised to aim for. She is trying to increase her serve sizes of rice, pasta and potatoes.

To boost complex carbohydrate:

- Eat lots of bread, pasta, potato and rice; choose them more often and increase the serving size — but be careful not to add more fat with an equal increase in the amount of toppings or sauces.
- From time to time try to include legumes such as dried beans and lentils in your diet instead of meat.

Too much sugar

Chances are if you're eating too much sugar, you're not eating enough of something else.

A number of our volunteers ate too much sugar — Norm has pledged to halve his sugar added to porridge or Weetbix from eight teaspoons to four! Elizabeth ate desserts almost every day during this period. Although this wasn't typical for her (it was an unusually indulgent week, she says!), it probably *is* typical for many other people, as is eating cakes, biscuits and sweets. Desserts and sweet snacks can push your sugar and fat intakes towards undesirable heights.

To cut back on sugar:

- Only occasionally have sugary foods such as sweets, cakes, biscuits and soft drinks; you don't need this added sugar — it's 'empty' calories with little nutritional value. Choose fruit as a snack instead — although fruit also contains sugar, it's packaged in a much more nutritious way, with fibre, vitamins and minerals.
- Reduce the number of spoons of sugar you put in tea and coffee or on a breakfast cereal.

Not enough fibre

Health professionals recommend we eat at least 30 g of fibre a day to help guard against heart disease and some cancers. But the average Australian male eats only 23 g a day, and the average woman 19 g. Of our volunteers, apart from Helen the only people to reach 30 g were men who ate a lot overall. If you don't eat a lot — like many women — you need to make sure the foods you choose are good sources of fibre.

Bread, cereals, fruit and vegetables are the main sources of fibre — and you need to eat generous portions of these regularly. A salad roll may contain cucumber, tomato, lettuce and carrot but the amounts are small, so the roll only counts as one serve of vegetables in all.

3. Eat a diet low in fat and, in particular, low in saturated fat.
4. Maintain a healthy body weight by balancing physical activity and food intake.
5. If you drink alcohol, limit your intake.
6. Eat only a moderate amount of sugars, and foods containing added sugars.
7. Choose low-salt foods and use salt sparingly.
8. Encourage and support breastfeeding.

Two further guidelines refer to specific nutrients:
1. Eat foods containing calcium. This is particularly important for girls and women.
2. Eat foods containing iron. This applies particularly to girls, women, vegetarians and athletes.

Energy ratios

Another tool used by health professionals and health authorities around the world is percentage targets for the energy contribution of particular nutrients — where, for instance, protein should account for 10 to 15% of the total dietary energy. Different health authorities use different percentages, which is confusing, but the ones we referred to are:

- Protein: 10 to 15%
- Fat: 20 to 30%
- Simple carbohydrates (sugars): less than 15%
- Complex carbohydrates: 40 to 50%

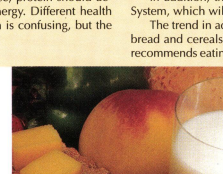
These figures are not very useful on a day-to-day basis as it's not easy for lay people to calculate how much of their energy comes from each nutrient. But they are useful in identifying imbalances in populations' diets and devising guidelines to correct them. With detailed analysis, they can help assess individuals' diets. We used a sophisticated computer program to calculate the intakes of these nutrients — plus total kilojoules, vitamins, minerals, fibre and so on — so we could accurately analyse our volunteers' diets.

Other food plans

There are numerous other plans and programs designed to promote healthy eating: the 12345+ plan from the CSIRO; the Target for Healthy Eating (SA); and the Healthy Diet Pyramid from the Australian Nutrition Foundation, to name but a few.

In addition, the NHMRC is working on the Core Food Group System, which will provide a basis for new food selection guides.

The trend in advice is towards more serves of fruit, vegetables, bread and cereals. In its draft form, the Core Food Group System recommends eating seven serves of bread or cereals every day, two



At 14 g per day, both Jane and Annette had particularly low fibre intakes. Annette only ate on average one serve of vegetables a day: "I'm indifferent to vegetables. It doesn't bother me if a meal doesn't have other vegetables as long as there's garlic and onion." The only fruit she ate throughout the 10 days consisted of an orange, a couple of apples, a plum and a few grapes. She says she'll try to include more vegetables in her home cooking. Although Jane's diet includes a glass of fruit juice, a piece of fruit and two serves of vegetables a day, she doesn't eat enough bread or other cereals to boost her fibre intake high enough.

To boost your fibre intake:

- Eat plenty of bread and cereals (preferably wholegrain), vegetables including legumes, and fruit.
- Try to have a variety of these at every meal: it will be much easier to clock up enough throughout the day that way, and the variety will stop you getting bored with your diet.
- Replace sugary and fatty snacks with fruit or bread (preferably without butter or margarine).
- If you already eat foods with fibre, try increasing the serve size of these foods and cutting back on fatty foods or ones rich in protein.

Too much protein

Our bodies need protein — but not as much as we in the western world tend to feed them. Although it sounds improbable to most people, you only *need* one serve of 60 g to 100 g of meat — or what's referred to as meat alternatives such as fish or tofu or ⅔ cup of cooked legumes — to meet your daily requirement. Although there's no harm in itself in eating too much protein, it makes the juggling act of eating healthily more difficult. If you obtain less of your energy from protein, you can eat more complex carbohydrate and more foods containing fibre without putting on weight.

For instance, Steve ate about twice as much protein per day as is recommended. Although bread, lentils and cheese provided him with reasonable amounts, it was his large serves of meat which sent his protein intake soaring. He ate almost 500 g of beef stew at a sitting on several occasions throughout the 10-day period, providing well above his entire daily requirement of protein in one hit.

You don't have to eat meat to obtain enough protein. Helen — the vegetarian in our group — obtained her protein from bread, pasta, dairy products and beans, and still it made up the recommended 15% of her energy intake.

For meat eaters, much of the protein we eat also comes with fat, so often cutting back on protein also reduces fat intake.

To reduce protein:

- Remember you don't need more than one serve a day of meat or meat alternatives.
- Reduce serving sizes of meat, fish, eggs and cheese.
- Try not to think of meat and fish as the essential central component of a meal — give equal attention to vegetables and starchy foods like rice and pasta.

Not enough calcium

Calcium is particularly important for women, as low calcium is one of the risk factors in osteoporosis (brittle bones). Dairy products are by far the richest source of calcium — a problem for people who don't like them or who are allergic to them.

Two of our female volunteers' calcium levels were below 70% of the recommended daily intake (RDI). (Because of generous margins in RDIs and the fact that individuals' needs may vary, anything between 70% and 100% is considered OK.) Neither of these people likes milk, although Annette says she'll drink it in milk shakes and drinking chocolate. The only dairy product Jane will willingly eat is cheese, although she's switched to eating a breakfast cereal with low-fat milk instead of toast in an effort to increase her calcium intake.

All the other volunteers' calcium intakes were fine. Alison says, "I half expected to be low in calcium as I don't think of myself as drinking much milk. I'm not a routine eater and don't

serves of fruit and five of vegetables. Similarly the CSIRO's 12345+ plan suggests three serves of fruit, four of vegetables and five or more of cereals (see the table below).

When we assessed the diets of our volunteers, we used the following plans or benchmarks:

- Energy contribution ratios as given on the left.
- Five Food Group recommendations for meat and its alternatives, and dairy products
- The CSIRO's 12345+ Food and Nutrition Plan recommendations for fruit, vegetables and cereals.

Food and nutrition guide, adapted from the CSIRO'S 12345+ Plan

Food group	Daily servings	Examples of one serve	Provides	Other comments
Breads and cereals	Five or more	One slice bread, cup (30–40 g) of breakfast cereal, ½ cup boiled rice, one cup cooked pasta.	Energy, dietary fibre, complex carbohydrate, protein, some vitamins and minerals	Choose wholegrain where possible for extra fibre
Vegetables	Four	Medium potato, ½ cup cabbage, ⅓ cup green beans	Complex carbohydrate, vitamins and minerals, dietary fibre	Choose one or more serves from dark green, orange or yellow vegetables
Fruit	Three	One apple, 10 strawberries	Vitamins and minerals, dietary fibre	One glass of fruit juice per day can count as half a serve
Milk and milk products	Two	A large glass milk (300 mL), 40 g cheese, 200 g yoghurt	Vitamins and minerals, especially calcium and vitamin D	Choose low-fat milk and cheese to reduce fat intake
Meat and meat alternatives	One	60 to 100 g meat, ⅔ cup of cooked legumes, two eggs	Protein, vitamins and minerals	Choose lean meats to reduce fat intake
Indulgences	No more than two	Two standard alcoholic drinks, medium piece of plain cake or bun, two sweet biscuits, small packet crisps	'Empty' kilojoules — good for putting on weight but little else	Something like a Mars Bar counts as two indulgences!

regularly eat breakfast cereals with milk." However, she easily obtains sufficient calcium from milk in tea and coffee during the day and from cheese and yoghurt regularly used in cooking as well as on fruit.

Boosting calcium:

- If you can't stand the taste of milk on its own, try making smoothies with fruit and using yoghurt more often.
- Choose low-fat dairy products so you boost your calcium intake without overdoing the fat.
- Drink your tea and coffee with low-fat milk.
- If you're allergic to milk, try calcium-fortified soy drink.

Not enough iron

As well as calcium, many Australians — especially women — don't eat enough iron, and our volunteers were no exception. The richest source of iron is red meat, but it's possible to obtain some from fish, bread and some vegetables. Although Helen ate no meat, her diet contained adequate amounts of iron — some of it from her breakfast cereal. And while Norm does obtain some of his iron from meat — notably beef — most days he obtained sufficient in small amounts from a variety of sources, including porridge.

Getting iron right:

- It's much easier to obtain the right amount of iron if you eat some meat or fish — it doesn't have to be large portions.
- Eat foods rich in vitamin C — like fruit — with iron-rich foods, as this increases iron absorption in the body.
- If you think you might be low in iron, check with your doctor or a dietitian, who might suggest you have a blood test.

Too much salt

Salt — or more specifically, the sodium part of the salt molecule — can be a factor in hypertension, or high blood pressure. A number of our volunteers' sodium intakes were slightly high, but of these, only Christopher's diet contained obvious salty items which he could cut without losing other useful nutrients: peanut butter, chips and other fast food. Both Steve and Alison had relatively high sodium levels but much of this was from bread.

To cut down salt:

- Don't add it when cooking.
- Don't eat salty snacks such as chips and peanuts regularly.
- Try going without for a while if you add it to food on the table — take heart from the fact that it takes only about three months to lose the desire for salt. If you can persevere that long you probably won't miss it after that.
- Don't eat too many salty foods like anchovies, olives and cheese.
- Choose low-salt varieties where possible of peanut butter, spreads and other processed foods.

What about alcohol?

Alcohol provides almost nothing in the form of nutrients. Contrary to popular myth, most commercial beer doesn't contain any vitamin B. However, it and some other drinks may contain a little vitamin C as a preservative; red wine provides some iron. But alcohol increases the body's requirements for some nutrients and may inhibit absorption of others. It also provides a lot of calories for such little nutrition. The recommended intake is no more than two standard drinks a day for women and no more than four a day for men. A standard drink contains 10 g of alcohol, which works out more or less as a measure of spirits, a small glass of wine or 285 mL of beer.

As far as a balanced diet goes, the more energy you get from alcohol, the less room for getting it right with other foods. One of our subjects obtained almost a quarter of total calories from alcohol — this makes it difficult to eat the correct amounts of nutrients such as vitamins and minerals and fibre. In fact, this volunteer was low in iron, calcium and zinc, as well as having a low fibre and complex carbohydrate intake. The types of food eaten were fine, but there wasn't enough of them in proportion to the alcohol to give the required amounts of 'good' foods.

And losing weight?

Michelle was trying to lose weight; she succeeded, losing a kilo over the 10 days. Although her intakes of vitamins and minerals were fine, slimmers generally should be careful not to slip below healthy levels.

If your calorie intake is reduced for some reason — whether it's for slimming, or as in the case of many elderly people, because they just aren't eating very much — the quality of food in terms of nutrients it provides becomes even more important than usual. After her diet was analysed, Michelle started using a low-fat milk and planned to cut out burgers and pizzas and to increase her consumption of fruit and vegetables.

Losing weight safely:

- Cut out or reduce foods which don't provide valuable nutrients — alcohol, cakes, biscuits, confectionery and fatty snacks.
- Choose lean meats and fish and keep your serving sizes small.
- Eat plenty of bread, cereals, rice and pasta (just go easy on fatty sauces or other added fat).
- Fill up on fruit and vegetables.
- Do more exercise; it helps control your appetite, burns up kilojoules and increases the amount of lean muscle tissue. Since muscle uses up more energy than fatty tissue, even when at rest, people who exercise regularly burn up more kilojoules.

Improve your balance

Healthy eating is a question of balance: balancing different food types in the correct proportions and balancing other constraints on your life. You may find, for instance, that you tend to eat more fruit and more salads in summer months but it's harder to maintain the balance in winter; or that to change your diet, you've got to persuade a partner who usually cooks to change their methods.

Many volunteers were surprised — even horrified — to learn how many vegetables or bread-type servings they would have to consume to be eating healthily according to the latest research (see *What is a healthy diet?* for details). In traditional western eating habits meat takes centre plate and vegetables and grains are often regarded as extras more than anything else.

Are the guides helpful?

All the food selection guides and other tools we looked at have limitations. They are not designed for rigid recommendations to any one person. For instance, one of the more obvious shortcomings of some guidelines is the fact they make no allowance for gender: a beefy male who eats twice as much as a small female would find it much easier to eat the recommended number of servings for fruit, vegetables and cereals. People also need different diets at different stages of their lives. In this article we've dealt with general recommendations for adults. Babies, children, teenagers, pregnant or lactating women and the elderly and inactive will need different diets again.

Nutrition is a young science and a fast-changing one. Consequently, some of the guidelines used are out of date and being reviewed; new guides are also being devised. When it came to analysing our volunteers' diets it was difficult to know which guides and tools to use — they all have different recommendations, although the general thrust (more grains, cereals and vegetables, less fat and sugar) is similar.

The Consumers' Association is involved in a review of nutrition guidelines which is being conducted by the National Health and Medical Council (NHMRC). The result should be a new national food selection guide (that's the type which gives recommended numbers of serves) or a series of guides for different target groups. We're keen to see an up-to-date national guide which takes into account varying needs. ❑

HOW DOES YOUR DIET RATE?

Use this quiz to find out. In some questions you're asked to multiply an initial figure; it's your final figure which goes to your total score for that question.

Fibre

How many times a week do you eat:

- A slice of wholemeal or light rye bread _____ x 2 = _____
- A slice of white or mixed-grain bread _____
- A high-fibre breakfast cereal, eg wheat biscuits, bran cereals, natural muesli, shredded wheat, rolled oats _____ x 5 = _____
- A serve of wholemeal pasta (1 serve = 1 cup cooked pasta) _____ x 10 = _____
- A serve of white pasta (1 serve = 1 cup cooked pasta) _____ x 3 = _____
- A serve of brown or white rice (1 serve = $\frac{1}{2}$ cup cooked rice) _____
- A serve of baked beans, lentils, or other legumes (1 serve = $\frac{1}{2}$ cup of baked beans, $\frac{1}{3}$ cup of cooked lentils) _____ x 6 = _____
- A serve of fruit or vegetables (count a glass of fruit juice as half a serve) _____ x 2 = _____

Total _____

Divide total by 10 for total fibre score: (and round to nearest whole number) ☐

Fruit and vegetables

How many servings do you eat in one day of:

- Fruit (count 1 glass of fruit juice as half a serve) _____
- Vegetables (include fresh, canned and frozen) _____

Total fruit and vegetable score: ☐

Bread and cereals

How many servings do you eat in one day of:

- Bread (a serve is one slice or half a large roll) _____
- Starchy foods like pasta (one cup cooked), rice ($\frac{1}{2}$ cup cooked), potato (one medium) _____
- Breakfast cereal or porridge _____
- Dry biscuits, eg crispbreads (four make one serve) _____

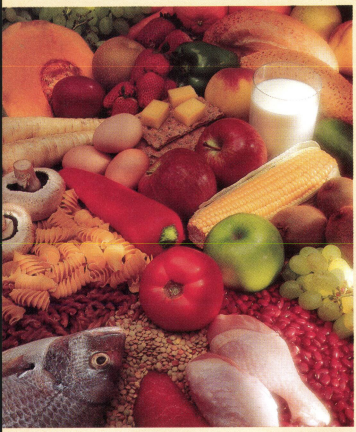
Total bread and cereals score: ☐

Vitamins and minerals

Which of the following food groups do you eat most days? (Score 1 for each.)

- Dairy foods including milk, cheese, yoghurt _____
- Bread and cereals _____
- Lean meat, eggs, beans, lentils or fish _____
- Green leafy vegetables _____
- Orange or yellow vegetables _____
- Fruit _____

Total vitamins and minerals score: ☐



Fat

How many servings do you usually eat in one day of:

- Butter or margarine (a serve is a teaspoon) _____
- Reduced-fat or low-fat spread _____ ÷ 2 = _____

Total _____

Multiply by seven to get a weekly figure: _____

How many times a week do you eat these foods:

- Fatty meat, mince or foods like bacon, sausages, burgers or vegetarian equivalents (not lean varieties) _____
- Meat pie, sausage roll, quiche, samosa, spring roll _____
- Chips or other fried food _____
- Crisps or savoury snacks _____
- Cheese or cheese dishes or sandwiches (not with low-fat cheese) _____
- Sauces based on cheese, cream or butter _____
- Cream or ice cream (not low-fat varieties) _____
- 600 mL of whole milk _____
- Pastry or crumble _____
- Cakes and biscuits _____
- Chocolate, sweets, fudge or toffee _____
- Oily or fatty meals, eg takeaways, pizzas _____

Total fat score: _____

Salt

How many times a week do you use:
(Don't count low-salt or reduced-salt varieties.)

- Salt on food at the table _____
- Salt when cooking (eg with vegetables) _____
- Tinned or packet soup _____
- Meat, vegetable or yeast extracts like Vegemite _____
- Bacon or smoked or salted fish _____
- Tinned meats like corned beef or ham _____
- Tinned vegetables (not low-salt versions) _____
- Pickles or soy sauce _____

Total salt score: _____

Sugar

How many serves per week do you eat of these foods?
(Don't count diet versions with artificial sweeteners.)

- Confectionery _____
- Sweet fruit drinks, cordial or milkshakes _____
- Cakes and biscuits _____
- Puddings, jellies, desserts _____
- Sugar in tea and coffee _____
- Malted or chocolate milk drinks _____
- Jam, honey or marmalade _____
- Fruit-flavoured yoghurts _____
- Fizzy soft drinks or flavoured mineral water _____

Total sugar score: _____

Now compare your scores with the following table to find out how your diet rates for health.

	A	B	C	D
Fibre foods	20 or more	19–16	11–15	10 or less
Fruit and vegetables	7 or more	4–6	2–3	1 or less
Breads and cereals	7 or more	5–6	3–4	2 or less
Vitamins and minerals	5 or more	3–4	2	1 or less
Salty foods	7 or less	8–15	16–20	20 or more
Sugary foods	15 or less	16–25	26–35	36 or more
Fatty foods	25 or less	26–33	34–40	41 or more

As and Bs are 'good' scores; if you scored mainly Cs or Ds you could improve your diet; in fact changes to improve any C or D scores are a good step. Remember too, if you're a smoker, your fruit and vegetable score should be higher as you need more vitamin C than a non-smoker.

■ **Mainly As**: A healthy eater. You seem to be eating the right choices. Continue to watch serving sizes and go for large ones of cereals, fruit and vegetables and smaller ones of fatty or sugary foods.

■ **Mainly Bs**: Nearly there. Your choices are in the right direction, you just need to balance your diet a little better. Use your scores in the quiz to work out which foods you need to cut back on and which ones you need to eat more of.

■ **Mainly Cs**: Plenty of room for improvement. If you're interested in improving your diet, isolate which are your problem areas and use some of the tips in this article

■ **Mainly Ds**: Not eating healthily. If you're serious about your health you need to reassess your eating habits and make a lot of changes. Our article can point you in the right direction; a dietitian can give you personal advice.

What do you get from your health insurance?

"I've done my sums. After four operations (and rehabilitation) in the last seven years I have concluded that if I'd put my money into a savings account (rather than pay my health fund) and used this money to pay my own bills I would now be about $1000 better off. With no need for further surgery I now think this could be the way to go" — letter from subscriber.

ACCORDING to our latest survey, people with health insurance are generally happy with the service they receive from their health fund but not so happy with what is actually covered by the insurance, considering the premiums they pay. This is reflected in the fact that Australians are leaving private health insurance in droves. In 1983, before Medicare was introduced, 64% of the population had some sort of private health insurance. The following year the figure dropped to 50% and has since dwindled further; by June 1993 it had fallen to 39%.

Figures like this have the health funds extremely worried. They have lobbied the Commonwealth Government to make changes to the Medicare system which will "place a floor under the private health insurance system", to quote a discussion paper from the Commonwealth Department of Human Services and Health. At the time of writing it was unclear exactly what the changes would be. Suggestions varied from week to week and then a new minister was appointed, but it does seem likely that by the end of the year there will be changes to the way private health insurance is administered in Australia.

The maintenance of an equitable and effective health system for all consumers is one of CHOICE's priorities, and our policy department is playing a very active role in the debates to make sure consumers are represented and heard.

Why buy insurance?

Late last year we sent a survey to 5000 randomly selected CHOICE subscribers and got nearly 2100 responses. As in the general population, **MEDIBANK PRIVATE** and **MBF** were the most popular funds, followed by **HBF, HCF, HBA, MUTUAL COMMUNITY** and **NIB**.

Respondents were asked for their three main reasons for buying health insurance. The most popular reason overall (for people with hospital or ancillary cover) was so they could choose their own doctor or specialist. This is a valid expectation of private insurance.

However, most people with top hospital cover said they bought it to cover *all* hospital and medical costs. This is a worry, considering it probably *won't* cover all costs — see *The gap*, right. A lesser number of people were more realistic and said they bought it to *assist* with hospital and medical costs.

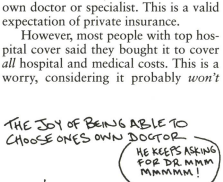
A significant number of respondents (around 9%) had terminated their insurance in the last two years, with the most common reason by far being because it was felt to be too expensive.

The gap

"In 1993 I had a cataract operation on my left eye ... The cost for the surgeon and assistant was $1125.25. Medicare paid $632.30. My fund paid $201.70 to make up the scheduled fee of $834, leaving me something like $290 out of pocket. As an aged pensioner this has been a bit of a slug on my finances" — letter from subscriber.

We wanted to know whether people know why there is a gap between the amount you're charged and the amount you get back from Medicare and your health fund. The most popular reason given was 'high doctors' fees' (77%) followed by 'high hospital charges' (68%). Just 26% said it was anything to do with a government ruling. (People could tick more than one answer.)

The actual answer is a combination of all three. The government sets a 'schedule fee' for all services from a doctor, whether in a hospital or privately, but there are no restrictions on the fees a



Health insurance: satisfaction rating (%) **1**

Insurer (in alphabetical order)	State	Ancillary cover: Dental rebate	Optical rebate
HBA	Vic	75	85
HBF	WA	55	75
HCF	NSW	60	65
MBF	NSW, Qld, Tas, Vic	65	75
Medibank Private	National	55	70
Medicare	National	not applicable	not applicable
Mutual Community	SA, NSW, Qld, WA	45	75
NIB	NSW, Qld *(A)*	65	65

(A) NIB is actually registered for operations in every state but as of June 1993 only had customers in NSW and Queensland.

doctor or hospital can actually charge. Medicare will pay 75% of the schedule fee for medical services received in a hospital and 85% of the schedule fee for services outside. (This means doctors who bulk-bill and charge you nothing are in effect charging only 85% of the schedule fee.) Health funds are allowed to cover the 25% difference between the Medicare rebate for hospital medical services and the schedule fee but nothing above that, and they can't cover any services from doctors outside hospitals. So if doctors want to charge higher fees than those recommended in the 'schedule', the government doesn't allow insurers to cover them. The aim of this is to keep fees down to a reasonable level; otherwise they could skyrocket.

This point doesn't seem to be made clear to people taking out health insurance. As noted earlier, far too many people responding to our survey expected their policy to cover all medical expenses while in hospital. The only way to be sure of this is to enter a public hospital as a public patient — in which case your accommodation costs and doctors' fees are covered by Medicare and you don't need insurance.

We also asked people who had been admitted to hospital in the past two years if they had been advised there would be costs not covered either by Medicare or their insurance. Less than half received any such advice. When people were told it was mostly by the hospital or their specialist. Only 17% said their health fund ever told them about these extra payments.

Public vs private

There is a perception that if you are a public patient rather than private you'll have to wait forever for some types of treatment. In fact, around 30% of people in our survey said one of their main reasons for having private insurance was to avoid waiting lists.

This perception was borne out by our survey: 18% of public patients had to wait longer than a month as opposed to 4% of private patients. Only 3% of private patients thought the waiting time was unreasonable compared to 10% of public patients, and around 80% of all patients were told how long they could expect to wait for treatment.

Are you being served?

We also asked around 20 questions about different aspects of service from the health funds and Medicare. The results are in the table below, but the basic finding was that people are generally happy about the service they receive from their funds, whether it's in a branch office, on the phone or in writing.

More people were dissatisfied with Medicare in the area of speed of service, whether it was at a branch or by phone or mail. When it came to helpful staff, speed of payment and information provided, Medicare was just as good as most of the funds. ❑

Respondents were asked a number of questions about how satisfied they were with different aspects of their ancillary cover and with service from their health fund and Medicare. The figures in the table are the percentage who were satisfied, rounded to the nearest 5%.

1 ANCILLARY COVER
For this question respondents were specifically asked to rate their satisfaction with the level of rebate they received for different aspects of ancillary cover. We have only included the three major ancillary areas (dental, optical and physiotherapy) in the table because we didn't have enough cases to report on the other areas. Of the areas we asked about, people found the level of dental rebates the least satisfactory in all the private health funds.

SERVICE
We asked a number of questions about different aspects of service, such as "Were you served quickly?", to which respondents could reply yes or no.

2 Adequate policy information
This question covers information on policy documents, brochures and claim forms. There was a slight tendency for people to consider the information from the smaller funds better than that from the larger ones.

3 Branch office accessible
Of the respondents, 92% had visited a Medicare office at some time or other; only 78% had visited a health fund office. Those who had visited a branch office were then asked how accessible they thought the office was. Not surprisingly, the offices of the larger funds were considered slightly more accessible than smaller ones.

4 Quick service
Respondents who said they had visited a branch were also asked if they were served quickly. Overall, only 70% said they'd experienced quick service at a Medicare office, compared to a significantly higher number for all the private health funds — including **MEDIBANK PRIVATE** with 80%. Since **MEDIBANK PRIVATE** and Medicare offices are one and the same, we rechecked how **MEDIBANK PRIVATE** customers rated the speed of Medicare service, and found it to be close to 80% too. We can only assume these customers have no other benchmark for comparison.

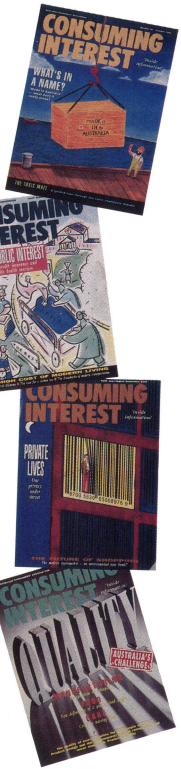
5 Helpful staff
This question refers to staff in branch offices. There was very little relation between the size of the fund and the helpfulness of its staff. **MUTUAL COMMUNITY** scored 100% in this column and under branch office accessibility because we rounded the scores to the nearest 5% (the actual figures were around 98% for both).

6 Quick payment
People were asked if they had made a claim on their health insurance or Medicare, and if so, did they consider there was a reasonable time between the claim and the payment.

hysiotherapy ebate	2 Adequate policy information	3 Branch office accessible	4 Quick service	5 Helpful staff	6 Quick payment	Insurer (in alphabetical order)
0	85	95	90	95	95	**HBA**
5	85	90	90	95	95	**HBF**
0	70	95	75	90	95	**HCF**
0	85	95	95	95	95	**MBF**
5	70	90	80	95	90	**Medibank Private**
ot applicable	85	90	70	90	85	**Medicare**
5	85	100	90	100	95	**Mutual Community**
5	80	90	95	95	95	**NIB**

CONSUMING INTEREST

BEYOND CHOICE



THE CONSUMERS' ASSOCIATION does a lot more than publish CHOICE, but you might not hear as much about it in the media as you do about our test results and exposés of shonky products or services. We have another magazine called *Consuming Interest* (affectionately known as *CI*) that reports on our activities in the area of consumer representation at government and industry level, and on our international activities. We use *CI* as a voice to influence people who have the power to make decisions which affect Australian consumers. It tells government departments and politicians what consumers think about their actions and provides a forum where consumers, their advocates and organisations can debate their concerns.

CI is published quarterly (spring, summer, autumn and winter issues) and we thought CHOICE readers might like to read a brief overview of these other activities, based on *CI*'s reports.

At the moment it is in the middle of its annual task of examining the activities and achievements of the Consumer Affairs ministers — federal, state and territory. At the end of this investigative process we pin the Consumer-Affairs-Minister-of-the-Year badge on the lapel of one of them. This year Terry Connolly of the ACT came up trumps.

The ministers were all eager to sit for our 'exam' — they sent us copies of reports, departmental policy projects, speeches, transcripts of interviews and even videotapes. Journalist Peter Cerexhe interviewed 60 people across the country and collected masses of information on what consumers, consumer organisations and public interest advocates think of the ministers. Every minister's 'report card' is given in full in *CI* if you want to judge for yourself whether or not their performance has been up to scratch.

Globally active

Although the Consumers' Association suffers from the tyranny of distance like most Australian organisations, we play an active role in global consumer representation, particularly in our own Asia/Pacific region. Our Chief Executive Officer, Louise Sylvan (who also wears the hat of treasurer for the International Organization of Consumers Unions) went to Harare, Zimbabwe, recently for the opening of the first African consumer office; Max Wijasuriya, a CHOICE senior engineer/research officer, travelled to the country of his ancestors and had discussions with the fledgling consumer movement in Sri Lanka. Both of these visits are reported in *CI*'s upcoming autumn issue.

Food, health, money, safety ...

Our technical staff participate in committees and task forces which make recommendations about safety standards. They comment on reports and push for policies which ensure government and business actions don't pose a threat to health or the environment, for example.

Consumers have told us their three primary marketplace concerns are food, health and money, so they're three major areas in which we work for you. Our staff speak at conferences on these issues, talk to politicians and parliamentarians, appear at inquiries and write submissions to ensure the consumer angle is considered at all times. They are consulted by businesses and government departments when they want to know how their policies impact on their customers.

Our current activities in these areas are reported in the autumn issue of *CI*:

- We put the government's new dietary guidelines for children under the microscope. It is untenable that what is healthy eating for adults should be recommended for children without adapting it to their specific needs.
- We shed some light on the health bureaucracies' attempts to create market-style incentives in the public health system. They want a health care market in which hospitals, nursing homes and community health centres sell their product — health services — to authorities, which buy them on behalf of consumers.
- We question Australia's retirement income policy. The current superannuation system leaves women, for example, shortchanged, as most have no steadily increasing income or don't stay in the workforce full-time for 40 years.

One of our big projects is coming to an end. Consumers and farmers are working together well to improve the quality of our food: they have signed a pesticide reduction 'charter'. While those on either end of the food production line are committed to this, those in the middle of it, mainly governments, are conspicuously inactive.

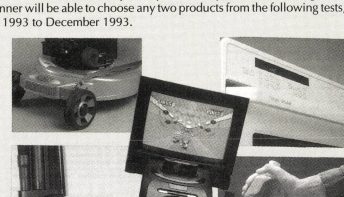
We are also in the throes of a major review of Australian food standards, set by the National Food Authority. The first cab off the rank is how food is labelled and advertised. We are making it clear that ordinary people consider labelling important, as it's the main — and often only — source of information for consumers about food products.

If you'd like to read about these Consumers' Association activities in more detail, read *Consuming Interest*. And we'll bring you a brief update of what's going on in the wider consumer world in this *Consuming Interest* column in CHOICE every three months. ❑

The 12th CHOICE Subscriber Draw

For new subscriptions and renewals received April 1 to June 30, 1994

Subscriber draws are now held quarterly and on July 1 we'll be holding our twelfth. The lucky winner will be able to choose any two products from the following tests, published October 1993 to December 1993.



- ☐ Vacuum cleaners (October 1993)
- ☐ Multi-function electric wall ovens (October 1993 — sorry, the Simpson and Westinghouse models are not available.)
- ☐ Petrol lawnmowers (November 1993)
- ☐ Telephones (November 1993)
- ☐ Video game systems (December 1993)
- ☐ Small drinks coolers (December 1993)

These are products we bought for testing, so you won't be the first to turn them on or set them up. But we'll cover any service problems with a CHOICE warranty that'll match the manufacturers' — just as if you'd bought them new.

All new CHOICE subscriptions and renewals received from members and personal subscribers (including donors of gift subscriptions) by June 30 will go into the draw, unless of course you indicate you don't want to be included.

(If you're not due to renew your subscription during the period, don't worry, we'll be holding other draws during the year — your renewal notice will have the details. And if you're on a two-year subscription you'll be entered on your first anniversary as well as when you renew again.)

✍ Use the order form overleaf ☞

CONDITIONS OF ENTRY

1. The winner will be drawn from new subscriptions and renewals from personal subscribers (including members and donors of gift subscriptions) received April 1 to June 30, 1994. If you opt for a two-year subscription, you'll be entered on your first anniversary as well as when you actually renew or subscribe.
2. Information on how to enter and prizes forms part of these conditions of entry.
3. Employees, and their immediate families, of the Australian Consumers' Association and its associated companies and agencies are ineligible to enter.
4. Entrants must be residents of Australia.
5. Applications are subject to a verification check and the judge's decision is final. No correspondence will be entered into.
6. The prizes will be delivered free anywhere within Australia.
7. Prizes cannot be taken as cash.
8. South Australian residents may enter the draw by completing the form and posting to: Reply Paid No. 24, ACA, 57 Carrington Road, Marrickville 2204, without subscribing to the magazine. Only one entry per person is permissible through this method.
9. Last date for receipt of entries to the draw is June 30, 1994. No responsibility accepted for lost, late or misdirected mail.
10. The draw will be conducted at the office of the Consumers' Association at 10 am on July 1, 1994.
11. The winner will be notified by letter and published in the September 1994 issue of CHOICE magazine.
12. The promoter is Australian Consumers' Association, 57 Carrington Road, Marrickville 2204. NSW Permit No. TC94/0830, Vic Permit No. 94/578 issued on 28/2/94, ACT Permit No. TP94/0381 issued under the Lotteries Ordinance, NT No. NT94/0285.

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Straight to the point

To help you get the right person as quickly as possible CHOICE has upgraded its telephone system. So here are two important numbers that will get you directly to the service you need:

Consumer Information Service:
(02) 559 9855

For free help with a consumer problem, or an update on past product tests.

Subscription Service: **(02) 558 8088**

For enquiries about subscription or to order books from our Consumer Bookshelf.

Consumer Rights Advice

CHOICE operates consumer rights lines for people having problems with a faulty product or a dispute with a service person. The lines set out what your basic rights are and what steps you can take to protect them. These lines are also available in four languages other than English — Vietnamese, Arabic, Chinese and Turkish.

CHOICE Consumer Rights Advice:
0055 20019

Advice in Vietnamese: **0055 20008**
Advice in Turkish: **0055 20009**
Advice in Chinese: **0055 20010**
Advice in Arabic: **0055 20011**

Youth lines

A line specifically for young consumers, the 'Ripped-off' Line, outlines your shopping rights as well as letting you know what you can do if you run into problems with something you have bought.

Students can also call a resource line to find out where to get up-to-date information on the consumer movement and the environment. These two topics are the most requested by students and teachers who ring our Consumer Information Service.

CHOICE 'Ripped-off' Line — Advice for Young Consumers: **0055 20007**
CHOICE Student Resource Guide: **0055 20012**

Product advice

A number of product lines also summarise what to look for when you are buying a particular product. Brand-name recommendations aren't included, however — these remain exclusive to CHOICE subscribers.

CHOICE Washing Machine Advice: **0055 20013**
CHOICE Water Filter Advice: **0055 20014**
CHOICE Baby Products Advice: **0055 20015**
CHOICE Safer Domestic Pest Control Advice: **0055 20016**

Calls attract a rate of 55 cents per minute.

LETTERS

Send your letters to **CHOICE, 57 Carrington Road, Marrickville 2204**. Where possible, please include your daytime telephone number, as we may wish to contact you direct for more information or to discuss your comments and queries.

JUNK INSURANCE?

I refer to your article on 'junk insurance' (*Don't waste your money on junk*, CHOICE, January 1994), specifically the section referring to medical emergency insurance (which may also be known as trauma, crisis or critical illness insurance).

The article suggested "most consumers would be better off sticking with income protection insurance".

Consumers should be aware that the two types of insurance are intended to meet different needs. Briefly, income protection insurance will pay up to 75% of a person's income (after an agreed period has elapsed after the onset of an illness or an accident) for an agreed period of time. It is intended to cover ongoing day-to-day expenses when the insured person cannot work.

On the other hand, critical illness insurance will pay a lump sum amount if the insured person gets one of the illnesses specified. This lump sum can help with medical bills (health insurance won't cover everything) and can pay for other bills: perhaps home help is needed. Most importantly, people who do not earn an income can be covered, such as a parent who cares for the children. Income protection insurance will not meet these needs.

The standard practice with critical illness insurance is that it will include death, terminal illness and total and permanent disability cover, often at very little additional cost.

A Trumble
Public Affairs Manager
Norwich Union Financial Services
Melbourne, Victoria

The objective of the 'junk insurance' article was to educate consumers about how to prioritise different types of insurance.

Within the section of the article covering life insurance products, we listed critical illness or trauma cover as a low priority. We believe the range of circumstances in which critical illness insurance will pay a benefit is limited and the cover provided is not comprehensive.

We acknowledge that the lump sum paid out under a critical illness insurance policy might be used to pay medical bills or provide home nursing or help. However, the list of medical conditions/illnesses covered under trauma policies varies from one insurance company to the next, and so too does the way in which those listed conditions are defined.

We have received a number of letters espousing the virtues of critical illness insurance. However, we still contend that term life and income protection insurance should be higher priorities for many consumers, though for some non-income-earners critical illness insurance may be a worthwhile option. As stated in the article, if, once income-earning consumers have term life and income protection cover, they can afford more insurance, they might like to consider trauma cover.

CUKE THOSE COCKROACHES

I read your article on cockroach killers (November 1993) with interest as we have a holiday van and annexe which was 'haunted' by cockroaches. The usual deterrents — sprays, bombs, etc — were tried with little effect. An old-fashioned method was suggested, namely to leave some cucumber skins lying around the van. It sounded like a good old Australian myth but anything is worth trying. To everyone's surprise on returning to the van there was not a cockroach in sight.

Worth a try!

Dr H R Player
Newborough, Victoria

KEEPING THE CUSTOMER SATISFIED

I hope your readers haven't been discouraged from buying Clarks shoes on account of little Carlin's experience (*Buy Australian*, CHOICE, February 1994).

My experience with Clarks is different and, from talking with other mothers, typical. Both school and dress shoes are very strong, well-made and stay wearable and good-looking right up until they're outgrown.

If there happens to be any fault with the shoes, this company deals with it quickly and efficiently. There was a problem with the leather of my daughter's party shoes and the shoes were replaced immediately. My young son lost the coloured arrow from the sole of his shoe. Clarks replaced it, and we easily glued it in.

I think this company deserves its fine reputation, so I hope this letter gets some prominence.

D Seguna
East Ryde, NSW

STALKING LAWS

I refer to the article on stalking published in the March 1994 issue of CHOICE.

The new Liberal Government in South Australia fulfilled an election commitment and moved quickly to make stalking a criminal offence when I introduced a new bill in the Upper House on February 15, 1994.

In addition to the proposed new laws the Liberal Government is considering the merits of a crime prevention tool called the Threat Management Unit. It was created in 1989 by the Los Angeles Police Department. Upon complaint the police seek out the alleged stalker, point out that the legislation exists and that it will apply if their stalking behaviour continues. The alleged offender is also informed about the effect of his or her behaviour. In that way, if the behaviour recurs, the inference that the intention exists will be much easier to draw.

Hon. K Trevor Griffin, MLC
Minister for Consumer Affairs, SA

At the time of our March issue going to press, the new SA Government had not yet decided how to pursue the previously introduced draft legislation on stalking. We're pleased to hear the new laws have since been introduced into parliament.

Artificial sweeteners

To satisfy your sweet tooth without added calories, you can now choose between more than 20 different tabletop sweeteners and an ever increasing number of low-joule processed foods and drinks, sweetened with one or more of the seven different artificial-sweetening substances permitted in Australia. But will they help you lose weight or reduce your sugar intake?

There are lots of 'tabletop' artificial sweeteners on the market, containing various sweetening substances, sometimes mixed together. Some examples are pictured: top, sweeteners with aspartame or aspartame plus acesulfame-K; below, saccharin and saccharin plus cyclamate; right, the new entrant, sucralose, marketed as Splenda. They all have a slightly different taste — and a few queries against their names.

IN THE ENGLISH LANGUAGE, 'sweet' not only denotes a sugary taste or flavour. The word is often used as a metaphor for things that are pleasing, agreeable or pleasurable. Our first taste of sweetish breastmilk might have set us up for life with an appreciation of anything sweet. And as poisonous plants often taste bitter, it might also have helped our ancestors survive.

In the health and image-conscious latter part of the 20th century, however, sugar has been implicated in various diseases — from hyperactivity through obesity to heart disease, though only the link with dental decay has been proved. Yet most of us haven't lost our 'sweet tooth' or retrained our taste buds. Enter the artificial sweetener.

Over the last two decades, more and more people have started using 'non-nutritive' artificial sweeteners and artificially sweetened foods and drinks. There are two types of sugar substitute. Nutritive sweeteners (which include the sugar alcohols sorbitol, xylitol and mannitol) provide about as much bulk and energy — measured in kilojoules (kJ) or calories — as sugar, but are less sweet. They are used in processed food as sugar substitutes. Non-nutritive sweeteners are calorie-free or release insignificant amounts of calories. Those currently available in Australia range from 30 to 2000 times the sweetness intensity of sucrose (ordinary table sugar).

To get an idea of the number of brands available as tabletop sweeteners (in tablet, granular or liquid form), we bought the smallest size of all the artificial sweeteners we could find in two supermarkets and a pharmacy. Details are listed in the table on page 24. It is not a complete list of *all* sweeteners in tabletop form, but will give you a good idea of the different types available in Australia.

Not only are there many more brands of artificial sweetener on the market

SWEETENER PROFILES

■ In 1879 scientists discovered the first artificial sweetener, **saccharin**, which is made from petroleum materials, has no kilojoules and is 300 times sweeter than sucrose. Many people find it has a bitter or metallic aftertaste. Saccharin can withstand high temperatures and can be used for cooking, but it's best to add it at the end of the cooking time as prolonged heat increases its bitterness.

■ **Cyclamates**, the calcium and sodium salts of cyclamic acid, were developed in 1937. They are stable at cooking temperatures and some people say they leave no aftertaste. Although structurally similar to saccharin and equally calorie-free, they are only 30 times sweeter than sucrose. Because of their lower sweetness factor, cyclamates are often used in combination with saccharin, usually in a 10 to 1 proportion, to decrease the bitter taste of saccharin. However, it's precisely this mixture of substances that has been accused of having the potential to cause bladder cancer (see *Cyclamates* on page 23). Cyclamates and saccharin have a synergistic effect — together the two compounds can yield a sweetness much more intense than either one on its own.

■ The third of the structurally similar non-nutritive sweeteners, **acesulphame potassium** (or **acesulfame-K**), was developed in 1967 and contains sulphur and nitrogen. It has no calories, is about 200 times sweeter than sucrose and is claimed to leave no bitter aftertaste, though some frequent users may disagree. As it's soluble in water and stable at high temperatures, it's suitable for cooking.

■ **Aspartame** was developed in 1965 and was introduced into Australia in 1984 under the brand name **NutraSweet**, which is also the sweetener in the tabletop product **EQUAL**. The NutraSweet company's patent on aspartame expired last year in Australia and other companies are now able to make or sell aspartame as well. It's a different type of sweetener, made from two common amino acids (aspartic acid and phenylalanine) which form a protein fragment. Strictly speaking, it's a nutritive sweetener as it provides energy (16 kJ/g) — the same, in fact, as sugar. However, it's about 200 times sweeter than sucrose, so you need much less of it and the kilojoules are negligible. Its aftertaste is not bitter.

Aspartame is unstable at high temperatures and therefore not really suitable for cooking, though if you want to try using your **EQUAL** for cooking, add it at the end of your cooking time. It also degrades over time — by 10% a month in carbonated drinks stored at room temperature.

■ **Thaumatins** are naturally occurring proteins, first extracted from the West African ketemfe (or *Thaumatococcus daniellii*) plant in 1968. The thaumatins-based product **TALIN** (which we haven't found in Australia) is about 2000 times sweeter than sucrose, but is said to have an unusual, lingering aftertaste. They are expensive to produce, unstable at high temperatures and unsuitable for cooking. In Australia, they're only found in a limited number of imported products.

■ **Sucralose** was developed in 1976 and has been available in Australia since October last year as **SPLENDA**. It's made from partially chlorinated sugar, which is indigestible and thus provides no kilojoules. Sucralose is about 600 times sweeter than sucrose. Unlike aspartame, it's highly stable during long-term storage and at high temperatures, which makes it suitable for cooking and baking and for use in products with a long shelf-life. Because it's based on sugar it's the artificial sweetener whose taste comes closest to that of sugar.

■ **Alitame**, in structure similar to aspartame, is formed from the amino acids L-aspartic acid and D-alanine. It's the latest sweetener approved in Australia (late last year) and, at 2000 times the sweetness of sucrose, it equals thaumatins as the highest-intensity sweetener. Alitame is suitable for cooking and is claimed to leave no unpleasant aftertaste. It was developed by Pfizer and is expected to be available in various processed foods and soft drinks — and possibly in tablet and liquid form — later this year.

since our last report in 1986, the number of sweetening substances has increased as well. At that time, five were approved for use in Australia: acesulphame potassium (or acesulfame-K), aspartame, cyclamates, saccharin and thaumatins. The National Food Authority (NFA) granted approval late last year for two more: sucralose and alitame. And in the years in between, the list of processed foods that may be sweetened artificially was extended significantly. (For a description of the seven sweeteners currently approved in Australia see *Sweetener profiles* above.)

The NFA recently commissioned research to assess current consumption levels of artificial sweeteners against acceptable daily intakes — more about what's considered an acceptable amount of each sweetener on page 25.

Losing weight and staying slim

Do artificial sweeteners help you lose weight? This is a controversial question among researchers. One study showed that rats fed with a saccharin and water solution ate 15% more food than when given only water, but with long-term saccharin intake they also burnt more fat and didn't become obese. In another study, when saccharin was added to an oil-water emulsion, rats ate about 50% more and gained weight rapidly. Other studies have shown that rats initially fed a sucrose and water solution gained weight, but lost it later when fed artificially sweetened water.

Research has shown that when we know we're eating artificially sweetened food we tend to compensate by eating foods rich in carbohydrates and fat.

The effects of sweeteners on weight seem to depend on "the level of protein and fat in the diet, whether the sweetener is presented in dry or wet form, the sex of the animal, and whether the animal has been reared free of virus and antibodies", according to one 1992 study. If so many variables come into play in studies with laboratory animals, imagine how difficult it is to assess the effects of artificial sweeteners on the eating habits of humans.

Some studies have shown that people who replaced sugar-sweetened foods with aspartame-sweetened items lowered their calorie intake by 7–15%. But other research has also shown that under normal circumstances — when we know we're eating artificially sweetened food — we tend to compensate by eating foods rich in carbohydrates and fat. "As sugar intake decreases, fat intake increases," says Leigh Reeve, a nutrition

consultant. "This inverse relationship is well known."

Another study of 193 male and female college students found that for both men and women, nutrient and calorie intake from 'sweet' foods was unaffected by whether or not they used artificial sweeteners or had reported a greater concern with weight loss and dieting. The women users of artificial sweeteners in this group mainly substituted artificially sweetened foods and drinks for those sweetened with sugar, whereas the men seemed to *add* them to their normal diets. The authors suggested that among this sample of "healthy young people, which included few serious dieters", the use of artificial sweeteners was mainly seen as a "pleasant option" to dieting without restricting food intake.

So it seems substituting artificial sweeteners for the teaspoons of sugar added to hot drinks alone is not likely to reduce your daily calorie intake significantly. It may help you shed kilos or maintain your weight if it's part of a balanced diet, and if you exercise as well. If you're serious about losing weight you should discuss your diet with a doctor, nutritionist or dietitian.

Sugar: empty kilojoules

■ **The myth**: Sugar is a major source of energy. We need lots of sugary foods to keep our energy levels up, especially when we feel run down.

■ **The reality**: Glucose (a breakdown product of all carbohydrates including sucrose, which we normally call sugar) is the ultimate source of energy for the body, but we don't have to eat sugar to get it. It's better to get your body's glucose from complex carbohydrate foods or from the sugar in fruits (fructose) or milk (lactose) rather than from straight sugar because these foods also provide other important nutrients. We don't need to eat any actual sugar for our nutritional requirements, but most people's diet contains a considerable amount from sources such as food and drink products and from adding it to hot drinks, cereals, etc. A 375 mL can of soft drink, for example, contains up to 10 teaspoons of sugar, an ice block about four to five teaspoons and a small 200 mL glass of made-up cordial about seven teaspoons.

The 1982 dietary guidelines advised Australians to "avoid eating too much sugar". This advice was revised in 1992, however, to "eat only a moderate amount of sugars and foods containing added sugars" — a change which nutritionist Rosemary Stanton believes could be misinterpreted. "People might think they *have to* eat sugar," she says. A wording such as "choose foods and drinks low in added sugar" — which we suggested at the time the new guidelines were being drafted — would be less ambiguous and less misleading.

Ms Stanton fears that sugary snacks, especially in children's diets, replace more nutritious foods such as fresh fruit. "If you've just had a sugary snack, you don't feel like an eating an apple," she says.

In the past various studies have implicated sugar in a number of health disorders — heart disease, diabetes, anxiety, fatigue, depression, hyperactivity and even criminal behaviour — but the evidence has been conflicting. Not even obesity has been linked conclusively to sugar consumption, because often people who eat lots of sugar also tend to eat fatty foods. As Ms Stanton says: "Sugar makes fat taste good."

If you attempt to cut down on sugar, remember its various guises on product labels. In addition to sugar (sucrose), products may contain glucose, lactose, fructose, honey, syrup or treacle.

But are sweeteners safe?

You might want to replace the sweet taste of sugar and avoid empty calories by using artificial sweeteners but — as is usual with food and nutrition topics — the full story isn't as simple as that.

Late last year, Australia was the first country to approve alitame and the third country (after Canada and Russia) to approve sucralose for use as artificial sweeteners.

■ **Alitame** is not expected to be marketed until later this year. Its manufacturer, Pfizer, is awaiting approval from the Food and Drug Administration (FDA) in the US and various other countries' regulatory bodies. More than 15 studies have confirmed the safety of alitame, but approval in the US will probably be delayed until the mid 1990s as the FDA has changed its protocol and requested that one animal study be repeated.

■ Johnson & Johnson Pacific launched its **sucralose**-based product **SPLENDA** onto the Australian market immediately following its approval in October 1993 — see **Sucralose** in *Sweetener profiles* for more information about what sucralose is. Its greatest claims are that it's "made from sugar so it tastes like sugar" and "can be used virtually everywhere sugar is used". According to the manufacturer, more than 100 studies over 15 years have indicated the product is safe and non-toxic; doesn't cause cancer, genetic changes or birth defects; has no effect on reproduction or on the central nervous system; has no undesirable gastrointestinal side-effects and does not promote tooth decay. (In fact, none of the tabletop sweeteners has ever been linked with tooth decay.)

However, some international scientific organisations expressed their concerns during the approval process about possible adverse affects sucralose could

Using artificial sweeteners will maintain your taste for sweet flavours. Cutting down on added sugar instead will result in a more nutritious diet.

SWEETENERS AND DIABETICS

IN THE REVISED *Dietary Guidelines for Australians*, the Dietitians' Association of Australia discourages sugar intake for diabetics because of its adverse effects on "blood glucose and blood lipid levels, weight and dental caries". It advises that diabetics should limit their intake of refined sugars to a maximum of 5% of total energy consumption.

According to Helen Mackenzie, a dietitian with Diabetes Australia, there are about 250 000 known diabetics in Australia and about the same number again who don't know about their condition. "We have no problems with any of the non-nutritive sweeteners," she says.

Diabetes Australia generally encourages diabetics to to use a variety of different types of sweetener so as not to exceed a limit of any particular one or, better, to get used to the taste of food without sweetening.

The packet of **LITE & LOW** sachets carries a warning "not suitable for diabetics". It's sweetened with sodium saccharin, to which quite a large amount of lactose, a natural milk sugar, has been added. Some dietitians recommend diabetics restrict their use of sweeteners containing lactose. If you want to do so, check the label or refer to the table on page 24, which lists the other sweeteners that contain it.

have on the human immune system. And the Australian National Health and Medical Research Council's (NHMRC) Food Science and Technology Subcommittee raised questions about one of the product's breakdown products — 1,6-dichlorofructose — which some feared could have the potential to cause genetic changes and cancer.

When the NFA took over responsibility for food additives from the NHMRC in 1991, it undertook another assessment but found the concerns "unwarranted" and sucralose "unlikely to present a risk to humans". "The general use of sucralose, on a sweetness equivalent base to sugar, is without appreciable toxicological risk", it said. The NFA recommended in August 1992 that sucralose be approved for use in a number of low-joule processed foods and tabletop products.

The United Nations Food and Agriculture Organization and the World Health Organization reviewed sucralose favourably in June 1990, but approval in the US and the European Community is still outstanding.

Sucralose is not by any means the only substance whose safety has been questioned over the years. Indeed, most artificial sweeteners available in Australia have at some time or other been implicated in various health scares, especially saccharin and cyclamates.

■ **Saccharin** is currently approved in more than 90 countries including the UK, despite a controversy in the 1970s which suggested it could be a potential cancer-causing agent in humans. The US Food and Drug Administration attempted to ban saccharin in 1977, as studies had found high doses of the sweetener caused bladder cancer in mice and rats. However, at the time saccharin was the only calorie-free sweetener available and the public protested against its withdrawal. Since then, a congressional moratorium — which has been extended repeatedly — has protected the sale of saccharin in the US.

Australian authorities never banned saccharin as the evidence was regarded as poor. More studies meanwhile have found little or no evidence that saccharin increases the risk of bladder cancer in humans. Despite its "mixed success with regulatory authorities around the world", writes UK scientist TH Grenby in a 1991 issue of *Trends in Food Science and Technology*, "saccharin has been found to be safe, even at very high levels, for human consumption".

■ **Cyclamates** are approved in more than 50 countries but were banned in 1970 in the UK, the USA and Canada when studies indicated they — in combination with

FOODS WHICH MAY BE ARTIFICIALLY SWEETENED

Seven artificial sweeteners are approved in Australia for use in the foods shown in this table. Except for thaumatins, the amount which can be added has a specified upper limit for each food or drink category. The number in brackets after the sweetener name is its food additive number; the new sweeteners alitame and sucralose have not yet been allocated a number.

According to the National Food Standard Code A8, artificial sweeteners may only be added to those foods specified in the code. Such foods have to be labelled 'artificially sweetened'. The label must also name the artificial sweetener(s) the food contains, their concentration and sweetness equivalent to sucrose, and any added sugars or related products.

Food	Acesulphame potassium (950)	Alitame	Aspartame (951)	Cyclamate (952)	Saccharin (954)	Sucralose	Thaumatins (957)
Biscuits, cake, pastry, other flour products excluding bread	✓	✓				✓	
Canned fruit (artificially sweetened, without added sugar)	✓			✓	✓	✓	
Chewing gum (carbohydrate-modified)	✓	✓	✓			✓	
Chewing gum (low-joule)	✓	✓	✓	✓	✓	✓	✓
Chocolate and milk chocolate (carbohydrate-modified)	✓	✓				✓	
Cocoa-based drinks and drink mixes	✓		✓			✓	
Coffee-based drinks and drink mixes	✓		✓			✓	
Confectionery (and carbohydrate-modified confectionery)	✓	✓	✓			✓	
Custard mix, custard powder and blancmange powder	✓	✓				✓	
Dairy-based desserts	✓	✓	✓			✓	
Dairy ice mix	✓		✓			✓	
Dessert mix	✓	✓	✓			✓	
Electrolyte: drink and drink base *(A)*			✓				
Flavoured-modified milk	✓	✓				✓	
Fruit drink	✓	✓	✓			✓	
Ice (and frozen) confection	✓	✓	✓			✓	
Ice confection (carbohydrate-modified)	✓	✓				✓	
Ice cream (carbohydrate-modified and low or reduced-fat)	✓	✓				✓	
Jelly (prepared, low-joule)	✓	✓	✓			✓	
Low-joule foods and drinks (not otherwise specified)	✓	✓	✓	✓	✓	✓	✓
Skim milk-based drinks and drink mixes	✓	✓	✓			✓	
Soft drinks		✓	✓			✓	
Soft drinks (brewed)	✓	✓	✓	✓	✓	✓	✓
Yoghurt products (some)	✓	✓	✓			✓	

(A) Permitted from July 12,1994.

Tabletop artificial sweeteners

Brand/product (in alphabetical order within category)	Type	Manufacturer/distributor	Origin	Size bought*	Price paid ($)*	Artificial sweetener
ASPARTAME						
EQUAL Sachets	Granular	Searle Consumer Products	Australia	50 g	2.72	Aspartame (36 mg/sachet)
EQUAL Spoon for Spoon	Granular	Searle Consumer Products	France	40 g	2.75	Aspartame (30 mg/g)
EQUAL	Tablets	Searle Consumer Products	Australia	100	2.73	Aspartame (18 mg/tablet)
NO FRILLS	Tablets	Franklins No Frills	Australia	200	3.29	Aspartame (18 mg/tablet)
SUGARINE with 100% NutraSweet	Tablets	The Boots Company (Aust)	Australia	200	4.65	Aspartame (amount not stated)
SUGARLESS	Granular	Wallace Laboratories	Australia	50 sachets	1.69	Aspartame (38 mg/sachet)
WEIGHT WATCHERS with NutraSweet	Tablets	Searle Consumer Products	Australia	150	3.71	Aspartame (18 mg/tablet)
ASPARTAME/ACESULFAME-K						
HERMESETAS New Taste	Tablets	Carter-Wallace	Switzerland	200	3.77	Aspartame (9 mg/tablet), acesulfame-K (4.5 mg/tablet)
CYCLAMATE/SACCHARIN						
SUCARYL	Liquid	Abbott Australasia	Australia	125 mL	4.90	Calcium cyclamate (8%), sodium saccharin (0.8%)
SUCARYL	Tablets	Abbott Australasia	Australia	250	2.80	Sodium cyclamate (50 mg/tablet), sodium saccharin (5 mg/tablet)
SACCHARIN						
FAULDING SACCHARIN	Tablets	Faulding	Australia	200	2.75	Saccharin (25 mg/tablet)
SUGARELLA	Tablets	Faulding	not stated	200	2.50	Saccharin (12.5 mg/tablet)
DI-MINS	Tablets	The Boots Company	Australia	250	3.80	Sodium saccharin (20 mg/tablet)
HERMESETAS Original	Tablets	Carter-Wallace	Switzerland	400	3.30	Sodium saccharin (amount not stated
HOME BRAND	Tablets	Grocery Wholesalers	Australia	500	1.29	Sodium saccharin (15 mg/tablet)
LITE & LOW	Granular	Reckitt & Colman Foods	Australia	50 sachets	3.70	Sodium saccharin (32 mg/sachet)
SUGARINE	Liquid	The Boots Company	Australia	200 mL	4.64	Sodium saccharin (5.9%)
SUGARINE	Tablets	The Boots Company	Australia	200	2.35	Sodium saccharin (28 mg/tablet)
SWEETEX	Tablets	The Boots Company	UK	500	3.95	Sodium saccharin (16 mg/tablet)
SUCRALOSE						
SPLENDA	Granular	Johnson & Johnson Pacific	USA	55 g	3.21	Sucralose (5.8 mg/teaspoon)
SPLENDA	Tablets	Johnson & Johnson Pacific	Australia	200	6.60	Sucralose (5.8 mg/tablet)

* Price paid in January 1994; larger sizes of many sweeteners are available, and may provide better value for money if you use them frequently.

** Sweetness equivalent to 1 level metric teaspoonful of sugar (70 kJ).

*** Per 1 level metric teaspoonful **or** per tablet.

(A) Equivalent to $\frac{1}{5}$ of a level metric teaspoonful of sugar.

(B) Tablets cannot be broken in half easily.

saccharin — increased the risk of bladder cancer in rats. Further studies linked cyclamates alone with cancer, but not convincingly, as laboratory animals showed no effects when they were given the substance orally. The US National Academy of Sciences concluded in 1985 that cyclamates were safe by themselves but may cause cancer (particularly bladder cancer) when mixed with saccharin.

In 1980, the FDA denied reapproval of cyclamates in the USA. Since 1982 it has been reviewing a new petition for approval. Cyclamates are still banned in the UK but are on the list of permitted sweeteners in a proposed EC Directive. The European Parliament is expected to decide soon on the proposal and if it grants approval, EC member states will have to adjust their relevant regulations.

■ **Aspartame** is approved in around 90 countries including the US and the UK. In the 1980s its safety to humans generated some controversy when a number of people reported adverse reactions, such as headaches, diarrhoea and menstrual disorders. However, scientific studies have not confirmed these doubts. While some people might be unusually sensitive to it, the safety of aspartame has generally been confirmed except for people with the rare genetic disorder phenylketonuria (PKU), because they can't metabolise the amino acid phenylalanine that it contains, which is also found in other protein foods such as meat or milk. A warning is given about this on all foods, drinks and sweeteners containing aspartame (such as those sweetened with NutraSweet).

■ **Acesulphame potassium** (acesulfame-K) is approved in more than 40 countries including the US and the UK. In Australia it is available in a wide range of foods. To date, numerous international studies have found no toxic or adverse affects.

■ **Thaumatins** are permitted as flavour enhancers or sweeteners in various countries including Australia, the US and the UK. Extensive tests have found no evidence of allergic reactions, mutation or toxicity.

The choice is yours

So the scientific evidence about possible adverse effects of some artificial sweeteners is conflicting, but the solution is simple for most people: if these claims worry you, you can leave them out of your diet. Rosemary Stanton's more global argument against artificial sweeteners is also an interesting one to consider: "I find it absurd that we use up energy resources to produce a food that provides no energy at all."

On the other hand, for diabetics and people on calorie-controlled diets, artificial sweeteners may add that little bit of sweetness people who liberally use sugar take for granted. And if used in moderation, they should not harm your health. But remember that using artificial sweeteners will maintain your taste for, or dependency on, sweet flavours. Cutting down on added sugar in all forms instead will result in a more nutritious diet and — together with an exercise program — will increase your chances of maintaining your good health. ❑

her ingredients	1 Sweetness equivalent to 1 tsp** sugar	Kilojoules***	Brand/product (in alphabetical order within category)
			ASPARTAME
ctose, silicon dioxide	½ sachet	8 kJ/half sachet	**EQUAL** Sachets
ltodextrin	1 tsp	8 kJ	**EQUAL** Spoon for Spoon
ctose, L-leucine, croscarmellose sodium	1 tablet	1.5 kJ	**EQUAL**
ctose, L-leucine, croscarmellose sodium	1 tablet	1.5 kJ	**NO FRILLS**
ctose, L-leucine, thickeners, anti-caking agents	1 tablet	1.2 kJ	**SUGARINE** with 100% NutraSweet
ctose	½ sachet	8 kJ/half sachet	**SUGARLESS**
ctose, L-leucine, croscarmellose sodium	1 tablet	1.5 kJ	**WEIGHT WATCHERS** with NutraSweet
			ASPARTAME/ACESULFAME-K
ycine, vegetable gum, L-leucine	1 tablet *(A)*	0.84 kJ	**HERMESETAS** New Taste
			CYCLAMATES/SACCHARIN
eservative, water	12 drops	0	**SUCARYL**
od acids, mineral salt, polyvinylpyrrolidone	1 tablet	0	**SUCARYL**
			SACCHARIN
ne	½ tablet *(B)*	0	**SACCHARIN**
ne	1 tablet	0	**SUGARELLA**
ne	1 tablet	0	**DI-MINS**
ne	1 tablet	0	**HERMESETAS** Original
ne	1 tablet	0	**HOME BRAND**
ctose, food acid, anti-caking agent	½ sachet	7.65 kJ/half sachet	**LITE & LOW**
ter, preservative	4 drops	0	**SUGARINE**
ne	½ tablet	0	**SUGARINE**
ne	1 tablet	0	**SWEETEX**
			SUCRALOSE
ltodextrin	1 tsp	8 kJ	**SPLENDA**
ctose, croscarmellose sodium, L-leucine	1 tablet	1.3 kJ	**SPLENDA**

1 How sweet they are
The sweeteners currently permitted in Australia are from 30 to 2000 times sweeter than sucrose. Sweetness is measured by dissolving a measured quantity of the substance in water and asking a panel of tasters to compare the taste to a 4% solution of sugar in distilled water. Perception of sweetness varies considerably from person to person.

HOW MUCH CAN YOU EAT?

THE ACCEPTABLE DAILY INTAKE (ADI) level of an artificial sweetener represents the amount that, if consumed daily throughout a person's life, would be considered safe by a wide margin. It's usually one hundredth of the highest 'no observed effect level' (NOEL) — the highest daily dose given to test animals without adverse effects.

The ADI is measured in milligrams per kilogram of body weight. For example, a 73 kg adult could consume 16 cans (375 mL) of carbonated soft drink sweetened with aspartame (such as Diet Coke or Diet Schweppes Lemonade — each can containing 180 mg of the sweetener) or 81 sachets of **EQUAL** tabletop sweetener per day, and stay under the ADI. This decreases, of course, for children or adults with a lower body weight — a 20 kg child could only consume four cans of carbonated soft drink with aspartame. With sucralose, a 73 kg adult could consume about 14 cans (375 mL) of soft drink containing this sweetener. And with saccharin, the same person would stay under the ADI consuming about seven 25 mg (or nine 20 mg) tablets of the pioneer sweetener.

Sweetener	Times sweeter than sucrose	ADI (mg/kg)*
Acesulfame-K	200	15
Alitame	2000	1
Aspartame	180	40
Cyclamates	30	11
Saccharin	300	2.5
Sucralose	600	15
Thaumatins (Talin)	2000	not limited

*Milligrams of sweetener per kilogram of your body weight that are considered safe on a daily basis.

The bugs within us

They're found in predictable places, where bends in the body create warm, moist pockets, and where the body is exposed to the outside world.

A MICROSCOPIC ZOO inhabits our armpits and groins, our eyes and ears, the entrances to our respiratory tracts, and the exits from our urinary tracts. Our digestive systems are continuous tubes along which bacteria congregate. Our urine, sterile as it collects from our kidneys, picks up bacteria as it leaves our bodies. The contents of our colons harbour 10 billion microbes per gram.

From between our fingers to between our toes, many microbes call the healthy human body home.

The bacteria, protozoa, viruses and fungi that live within us come in two basic varieties: residents and transients. 'Normal resident flora' are always present and include, for example, the microbes of the digestive system. 'Transient flora' come and go, vanquished by washing, flushed out in sweat, urine, tears and faeces, only to re-establish themselves repeatedly.

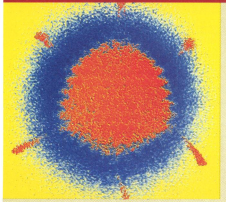
So diverse and numerous are the 'normal flora' that biologists consider the human body an ecosystem. And, as in large-scale ecosystems, our microbial stowaways find their own niches.

"In the mouth, there are certain bugs on the teeth, gums, cheek and tongue. All these areas have different combinations of species," says Dr Anne Tanner, senior scientist at the Forsyth Dental Center in Boston, USA.

Bacteria requiring oxygen colonise tooth surfaces, for example; those not needing oxygen inhabit crevices in the gums and minute folds on the surface of the tonsils.

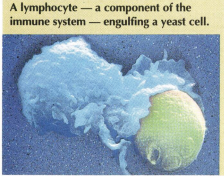
Researchers in the department of periodontology at the University of Hel-

BODY BOARDERS



An electron micrograph of an adenovirus, which causes infection to the upper respiratory tract.

A lymphocyte — a component of the immune system — engulfing a yeast cell.



Viruses

Considered an 'infectious agent' rather than a living thing by many biologists, a virus is simpler than a cell, built of a nucleic acid (DNA or RNA) surrounded by protein.

Bacteria

Among the simplest of cells, bacteria come in a variety of forms. They are distinguished by their growth requirements, shape (round are cocci, spiral are spirilli, rods are bacilli, and curved rods are vibrios), and whether their cell walls retain a purple dye (Gram-positive) or not (Gram-negative).

Protozoa

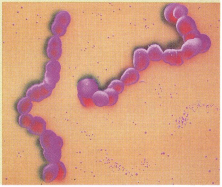
Microscopic organisms built of a single, complex cell, often distinguished by the way they move.

Fungi

Organisms built of complex cells, lacking nervous systems (which animals have) and lacking the ability to extract energy from sunlight (which plants have). Yeast are single-celled fungi.

Photographs: The Photo Library, Sydney.

***E. coli* bacteria (above), commonly found in the intestines, and streptococcus bacteria (below), types of which cause sore throats and pneumonia, among other infections.**



sinki compared bacteria and fungi in healthy mouths to those in the mouths of 51 denture-wearers. One fungus was notably missing in the denture group, presumably because its home, the teeth, was gone.

Microbes first inhabit our bodies as we are born, hitching a ride in the birth canal. Within 12 hours, several species are present in the intestinal tract, transferred from the mother, from food, and from the baby's fist should it contact the mouth. These are not necessarily hazardous to the baby and in fact are beneficial in stimulating the infant's natural immunity. Immunologists even suspect that a parent's instinctive kissing and nuzzling of the newborn introduces bacteria that rev up the child's immune system.

Throughout our lives, normal flora benefit us. "They manufacture nutrients — biotin, pantothenic acid, pyridoxine, vitamin B_{12} — stimulate the immune system to recognise threatening microbes, and stake out a territory that might otherwise be occupied by pathogenic [disease-causing] organisms," says Holly Ahern, a microbiologist at the State University of New York. Resident microbes are also behind such embarrassing problems as intestinal gas, bad breath (halitosis) and body odour.

One reason why the bugs within us may normally do no harm is that none is too abundant. For example, a fungus of the yeast family, *Candida albicans*, can live harmlessly in the vagina, bowel area, mouth and skin. But when the organism undergoes a population explosion, a troublesome infection called candidiasis occurs, typically in the vagina or in the mouth ('thrush').

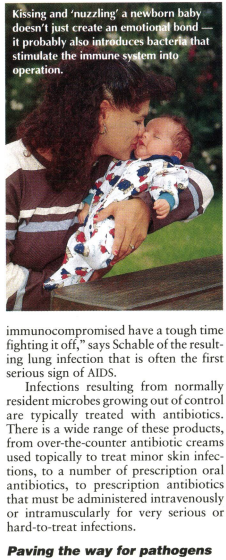
Taming troublemakers

The bugs normally within us are kept from multiplying to infective levels in two ways. First, "These organisms are confined to an area that is theoretically outside the body [because they exit directly to the outside]," says Charles Schable of the US Centers for Disease Control in Atlanta.

Such areas, which form the body's first line of defence, include the skin, digestive system, and genito-urinary and respiratory tracts. The lining of the small intestine, for example, forms a barrier that keeps organisms out of body areas where they could cause disease. "If these intestinal microbes were in the blood, you'd be in deep trouble," Schable adds. One normal gut bacterium is *Escherichia coli*. When a wound provides *E. coli* access to the abdominal cavity outside the intestines, a severe infection, peritonitis, results.

Should normal flora escape to an unfamiliar place they still may not cause harm, because they are attacked by cells and biochemicals of the body's second line of defence, the immune system. But when immunity fails, microbes normally present in low numbers flourish, causing opportunistic infections, so-named because the bugs seem to take advantage of the slip in immune surveillance.

"If the immune system is impaired due to AIDS or chemotherapy to treat cancer, for example, organisms the body normally fights off with ease can spread. An example is *Pneumocystis carinii*, which can reside harmlessly in the throats of normal healthy people. The



Kissing and 'nuzzling' a newborn baby doesn't just create an emotional bond — it probably also introduces bacteria that stimulate the immune system into operation.

immunocompromised have a tough time fighting it off," says Schable of the resulting lung infection that is often the first serious sign of AIDS.

Infections resulting from normally resident microbes growing out of control are typically treated with antibiotics. There is a wide range of these products, from over-the-counter antibiotic creams used topically to treat minor skin infections, to a number of prescription oral antibiotics, to prescription antibiotics that must be administered intravenously or intramuscularly for very serious or hard-to-treat infections.

Paving the way for pathogens

In a more subtle way, the normal microbes in our bodies can also usher in infection when their numbers fall. "This can happen when something in their environment changes, such as the moisture, temperature, availability of oxygen, or the pH," says Ahern. pH is a measurement of acidity or alkalinity, with a value of 7 representing neutral, below 7 acidic, and above 7 alkaline.

Often, changes in microbial habitats result from something we do. Consider the ancient practice of douching, cleansing the vagina. Many women who douche do so because they think it is a healthy practice. It may be just the opposite. Douching is a known risk factor for pelvic inflammatory disease (PID), a severe infection of the upper reproductive structures in women. Although PID is a sexually transmitted disease, douching raises the risk of developing it in two ways, according to an article in the February 1992 *American Journal of Public Health*. First, it alters the pH of the vagina to favour pathogens. Second, it flushes bacteria from the vagina and cervix up into the uterus and fallopian tubes, seeding and spreading infection.

Toxic shock syndrome (TSS) is a potentially life-threatening disorder resulting from production of a toxin by *Staphylococcus aureus*, a sometimes normal resident of the vagina. In 1980, the condition was linked to certain high-absorbency tampon products. Tampon instructions now usually bear warnings of the association between TSS and extended use of tampons.

Drastic changes in a person's diet can affect resident flora. For example, a person who never eats fruit and vegetables may start taking fibre pills after reading an article saying fibre can help prevent cancer. Cramps and diarrhoea may set in as the intestinal bacteria that normally occupy the digestive tract are hastened out of the body by the sudden barrage of fibre.

Emotional upset can cause diarrhoea too. Diarrhoea caused by stress has a higher pH and therefore kills acid-producing bacteria (lactobacilli). Lack of lactobacilli typically leads to population explosions of yeasts. Normal conditions return when the trauma passes. Taking certain antibiotics, such as those of the penicillin family, can also cause alkaline diarrhoea and deplete lactobacilli.

Increased alkalinity and decreased lactobacilli populations also make the vagina more hospitable to yeast, causing the itchy infection that affects 75% of all women at some time in their lives.

The incidence of yeast infections is believed to be growing due to the increased use of antibiotics and oral contraceptives. They can change the pH balance of the vagina to a more alkaline environment, allowing the growth of harmful bacteria and fungi. Additionally, certain factors such as diabetes and poor eating habits, like high-sugar diets, cause women to become more suscepti-

MICROBE HANG-OUTS

■ **Skin:** Bacteria (staphylococci, streptococci, *E. coli*, and diphtheroids) and fungi (*Candida albicans* and cryptococcus) congregate in warm, hairy, moist areas, such as the groin and armpits, but steer clear of dry, calloused areas, such as the palms and soles. They also grow on the scalp and near sweat and sebaceous (oil) glands. Transient microbes dwell in mucus secretions near body openings, such as the mouth, nose, eyes, anus and vagina, vanquished only temporarily by washing. Bacteria return to the skin from the environment and from populations that live deep down in oil gland ducts.

■ **Ear:** The outer ear is home to a varied collection of bacteria, yeasts and moulds. The middle and inner ears are normally free of microbes, but can become occupied — and infected — by persistent coughing, sneezing and nose-blowing. These actions open the eustachian tubes, permitting microbes to enter the ears. The three major middle ear pathogens — *Streptococcus pneumoniae, Haemophilus influenzae* and *Branhamella catarrhalis* — are more prevalent in children with recurrent middle ear infections, even when they are healthy, than in children who do not have frequent ear infections.

■ **Eye:** Several types of bacteria live in and around the eye, over the opening, in the conjunctiva (the eyelid lining), and in tears. They include species of staphylococcus, streptococcus, diphtheroids, and neisseria. Visual structures are protected from these microbes by partitioning membranes, and by lysozyme, an antibacterial substance in tears.

■ **Mouth:** The mouth harbours the most bacteria of any body part. One resident, *Streptococcus mutans,* causes dental caries (decay), but only under certain conditions. Sticky foods, such as sweets and raisins, enable the bugs to cling to teeth, where they produce acids that eat away at tooth enamel. "You can carry the bug but not have decay until you eat the wrong foods," says Dr Anne Tanner, senior scientist at the Forsyth Dental Center in Boston, USA.

A 'good guy' in the mouth is *Streptococcus sanguis.* It's a hydrogen peroxide producer and this hinders the growth of potentially pathogenic organisms.

■ **Digestive tract:** Swallowed microbes perish as they splash into the stomach's acid contents, where only those organisms protected in the mucus-rich lining survive. Microbe populations grow in the upper part of the small intestine (the duodenum), but bile, a greenish substance produced in the liver and stored in the gall bladder, inhibits their growth. In the lower portions (the jejunum and ileum), as the effects of stomach acid and bile dissipate, bacterial populations bloom. Most nutrients are absorbed into the bloodstream in the small intestine, leaving waste, toxins and microbes galore as the normal state of affairs in the large intestine.

The further down the digestive tract, the more populous the bacteria, ranging from an estimated 1000 to 100 000 per gram of contents in the stomach to 10 billion per gram in the large intestine. By the time the contents are excreted in a bowel movement, there are commonly 100 billion bacteria per gram.

■ **Respiratory system:** Many microbes live in the nose and throat, but the lower respiratory structures — the larynx (voice box), trachea (windpipe), bronchi, bronchioles, and alveoli (the microscopic air sacs in the lungs) — have built-in barriers. The narrowing of the tubes keeps some bugs out, and the numerous waving, hairlike cilia that fringe the cells lining the respiratory tract propel bugs up and out. One of the dangers of cigarette smoking is tobacco tar's destruction of the protective cilia, so providing a gateway for bacteria from the nose and throat to the lungs.

■ **Urinary tract:** Urine dripping from the microscopic kidney tubules, into the ureters to the bladder, is sterile. But bacteria, yeast, viruses and fungi come on board in the urethra, because this tube leads from the bladder to the outside. Although the acidic urine routinely flushes microbes out, they can return. Healthy urine on its way out of the body may harbour up to 1000 bacteria, of several types, per millilitre. More than 100 000 bacteria per millilitre of a single type is a sign of a urinary tract infection.

Women are more prone to urinary tract infections than men because the outlet of the urethra is closer to the bacteria-laden rectum, and it is shorter.

■ **Vagina:** The vagina is lined with what biologists call a 'bacterial biofilm', consisting of a dozen types of microbe. Some, such as strep and staph germs, easily wash away. Others, such as certain lactobacilli, hold fast. The microbial environment of the vagina varies as the pH (acidity or alkalinity) of secretions shifts with the changing hormonal milieu as a woman ages.

The pH ups and downs affect which microbes inhabit the vagina. When secretions are alkaline, before and after the childbearing years, *E. coli*, diphtheroids, streptococcus and staphylococcus predominate. During the childbearing years, when secretions are acidic, lactobacilli become abundant, and different strains of streptococcus and staphylococcus live. One common cause of vaginal inflammation, or vaginitis, is infection by *Trichomonas vaginalis,* a protozoan with a characteristic flipper-like tail. *Neisseria gonorrhoeae,* the bacterium responsible for the sexually transmitted disease gonorrhoea, can survive the acid environment.

ble to recurring vaginal yeast infections. Fatigue and stress can also make women more susceptible.

Treating yeast infections

Since many health problems seem to result from lowered levels of lactobacilli, can consuming live cultures of *Lactobacillus acidophilus*, found in some yoghurt products, replace the harmful bugs, restoring the low (acidic) pH? The value of eating yoghurt containing live bacteria has recently received some scientific support. A 1992 issue of the *Annals of Internal Medicine* reported on 13 women with recurrent vaginal yeast infections. The women ate 250 g a day of yoghurt with live *Lactobacillus acidophilus* for six months, then no yoghurt for six months. They had fewer infections while on the yoghurt regimen, and had higher levels of the apparently protective bacteria in their vaginas and rectums at this time.

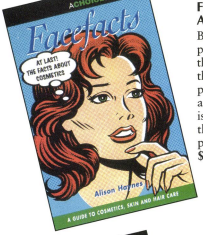
But in an accompanying editorial, another doctor cautions women against trying to treat a vaginal yeast infection with yoghurt alone. Many yoghurt products lack live lactobacilli. And even with yoghurt that contains live cultures, there isn't enough scientific data to indicate that you can rely on yoghurt alone. Medication is usually needed to overcome the infection first. (See *Yoghurt and 'Probiotics'* in CHOICE, November 1992, for more information).

Most of the time the human body maintains a peaceful coexistence with its microscopic residents and visitors. We can help preserve the peace by learning to recognise when the bugs within us get out of control. ❑

This article originally appeared in ***FDA Consumer*** *Magazine.*

CONSUMER BOOKSHELF

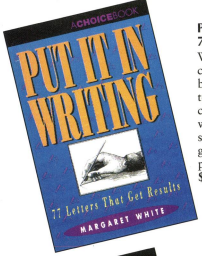
CHOICE BOOKS



FACEFACTS
A Guide to Cosmetics, Skin and Hair Care

Beauty choices for the discerning cosmetics purchaser. *Facefacts* guides you through the thickets of advertising claims and distinguishes the hype from the hard facts, explaining phrases like 'hypoallergenic', 'comedogenic' and that old chestnut 'natural'. It looks at the issue of testing on animals, and covers how the sun damages your skin and how best to protect it.

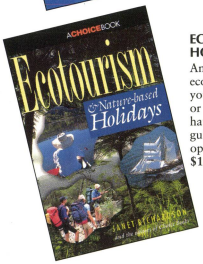
$18 paperback 240 pp **Code: FF**



PUT IT IN WRITING
77 Letters That Get Results

We all know an effectively worded letter can get results. But quite often we give up before we start, because we don't know how to write the letter. This book contains 77 well considered, cool and authoritative letters, written by a lawyer, which can be adapted to suit your situation, and which are designed to get the responses you want. It also contains practical advice about your rights.

$16 paperback 168 pp **Code: PIIW**



ECOTOURISM & NATURE-BASED HOLIDAYS

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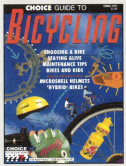

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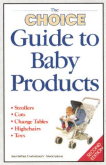

THE CHOICE GUIDE TO BABY PRODUCTS

Buying for a baby can be an expensive exercise, and not all products are safe. Our popular guide helps by providing general and specific buying advice for a baby's requirements.

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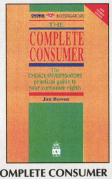

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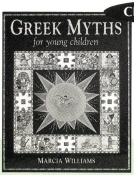

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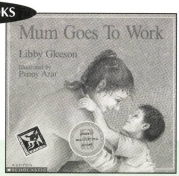
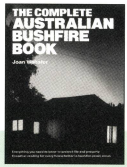
$22 hardcover 36 pp **Code: GMYR**



MUM GOES TO WORK
The story of 10 children's day at a day-care centre and what their mothers are doing during that day. This delightful picture book is the perfect book for a young child who goes to day care or who is soon to go.
$10 paperback 32 pp **Code: MGTW**



THE COMPLETE AUSTRALIAN BUSHFIRE BOOK
A detailed guide to bushfires and their prevention. Covers how bushfires start, how to react to a bushfire, how to include fire-resistant features in your home, school or business premises, what to do if you're travelling when a bushfire threatens, and first aid measures. This book is endorsed by firefighting authorities throughout Australia.
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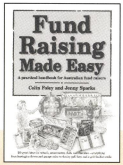

FUND RAISING MADE EASY
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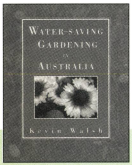

WATER-SAVING GARDENING IN AUSTRALIA
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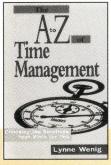

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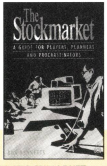

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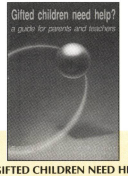

GIFTED CHILDREN NEED HELP?
Articles from *Gifted*, the journal of the NSW Association for Gifted and Talented Children, on topics such as new policies and programs, identification of the gifted child, being a parent of a gifted child, etc. Although the practical information is NSW-based, the advice and concerns are universal.
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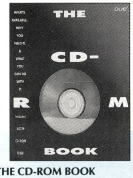

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This is a comprehensive resource book about CD-ROM and multimedia. Providing its own CD-ROM disk, this book discusses the equipment needed to run a CD-ROM disk, installation, how CD-ROM works, networks, available programs and future developments.
$62 paperback 402 pp plus CD-ROM disk
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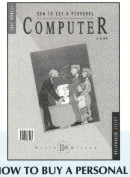

HOW TO BUY A PERSONAL COMPUTER
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An up-to-date guide to identify what you need in computers, software and peripherals for your home or office, leading you gently through all the bewildering jargon and competing offers.
$10 paperback 64 pp **Code: HBPC**

MID-PRICED VIDEO RECORDERS

We put 11 mid-priced video recorders to the test and found they all produce a good picture, but some are much easier to use.

SOME MANUFACTURERS estimate seven out of 10 Australian households now own a video recorder. Video sales have steadily grown since the introduction of the first domestic models, but a 1992 retail survey showed around 630 000 video recorders sold in this country during that year, which, for the first time, was a decrease in sales figures from the previous year. Whether this is due to the recession or shows a general saturation of the Australian market is yet to be determined, but competition in the marketplace is fierce and manufacturers tend to release new models at a fairly fast rate.

We last looked at video recorders in March 1993, when we tested budget-priced models that sold for under $500. This time we bought all machines on the market with a recommended price between $500 and $700. This 'mid-priced' segment of the market accounts for almost one third of video recorders sold in Australia. The models in this price range tend to be fairly well featured, but expect to pay more if you want things like hifi sound or digital video effects. Eight of the 12 models tested have 'long-play' capability, which allows them to record twice as long on a given tape (see the table notes on page 35 for more on this).

PROGRAMMING

During the last decade people have come to terms with using a computer at home or work, sending faxes, storing numbers in their touch-tone phones and even figuring out how to change the toner in the photocopier. These same people, however, can be found glassy-eyed and quivering with frustration at the mere thought of having to program their video to record a TV show the next night. Some people would say this is due to the laziness of the user in not trying to learn how to do it. Others (including us) would say it's the fault of the video designers for making the programming systems too complicated. Whatever the reason, there's no doubt videos have an image problem when it comes to ease of use.

Programming a video, or 'timer recording' as the manuals often call it, needn't be a chore. Clear instructions and well-marked controls make life a lot easier. Even though there are a few different programming methods, they all require the same basic information — the time, day and channel of the show you want to record.

We looked at the way this information is entered on our test models and found three basic programming methods are used. An outline of the principles of the three methods are described below, although models may differ slightly in the naming of the buttons and methods for correcting mistakes. All the machines we tested could be programmed using the remote control.

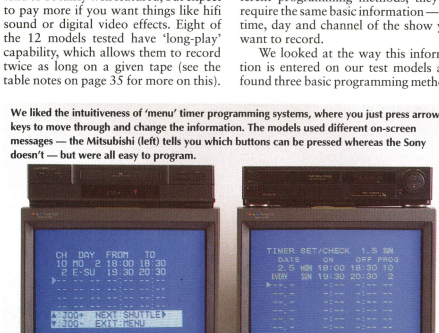
■ **Set/enter.** Five of the 11 videos in this test used this method of programming. In general, you start by pressing a 'program' button. One of the items you need to set (time, date, etc) will start flashing on the remote control display, front panel display of the video or the television screen, depending on the model. By using one of two buttons (often indicated by arrows or + and – signs), you can increase or decrease the value of this item. When it's set on the right number you press some form of 'enter' button and the next item will start flashing. By using these three buttons (enter, increase and decrease) you move through each item in order. When it's fully set, pressing the 'program' button again will finish the process.

The JVC used the 'set/enter' method of timer programming, but a confusing display combined with a poorly laid out and confusingly marked remote control made this model by far the least intuitive to program.

■ **Menu.** This method relies on a 'menu' displayed on the television which offers a selection of options. Usually a set of 'arrow' keys (a bit like the cursor keys on a computer) are used to navigate through the menu items and change the various settings. The programming information doesn't need to be set in any order. You can just move the cursor to whichever item (start time, channel number, etc) you wish to change. Once you're happy with all the settings you just exit the menu. One advantage of this system is that it can prompt the user by displaying a list of which buttons to press.

■ **Menu/direct entry.** This method uses an on-screen 'menu' system like that above, but once you're into the programming screen the numbers are directly entered from a keypad. The numbers must be entered in order (eg start time, stop time, day, month, etc) but there is no need to press an 'enter' button between the differ-

We liked the intuitiveness of 'menu' timer programming systems, where you just press arrow keys to move through and change the information. The models used different on-screen messages — the Mitsubishi (left) tells you which buttons can be pressed whereas the Sony doesn't — but were all easy to program.


CH DAY FROM TO
10 MO 2 19:00 18:30
2 F-SU 19:30 20:30
▲ JOG▼ NEXT/SHUTTLE
▼ JOG▼ EXIT/MENU
TIMER SET/CHECK L.S SW
DATE ON OFF PROG
2.5 MON 18:00 18:30 10
EVRY SUN 19:30 20:30 2

ent items — when you enter the last digit for one item (eg start time) the machine moves automatically on to the next item (eg stop time). You don't have the freedom to move around to any item in the same way as with the standard menu system, but entering the digits directly in this fashion is often less tedious than incrementing them. Some 'set/enter' units allow you the option of entering the numbers directly from a keypad, but you still have to press an 'enter' key to move on.

None of the programming methods is inherently difficult to understand, but we did find models with some form of on-screen menu tended to be a little easier to follow. If you've already had some experience programming a video using a particular method you'll probably find it easier initially with another video that uses the same basic system.

When assessing the ease of programming, we looked at how useful the instructions were and the usability of the programming controls and display, and gave a score to each model, shown in the table overleaf. There's also a brief summary of timer programming for each model in the profiles on pages 36 and 37.

GETTING SET UP

Another area of concern for some people is setting up the video when they first unpack it. Essentially you'll need to do the following:

■ **Connect the video to your television.** In most cases this will involve taking the aerial lead out of your television and plugging it into the video. Another cable, usually supplied, connects between the video and the TV aerial socket. All the videos covered this fairly well in their instructions. Once the video is physically connected you will need to tune the television to receive it. The video will appear to the television as another station, so follow the instructions for your TV on how to tune in channels.

■ **Tune the channels on the video.** Much like a television set, the video recorder must be tuned to all the local television stations. Finding a TV station is like finding a radio station. You move up or down the band till you locate the station you want, then you adjust the tuning to give the best reception. Once you've tuned in the station you want you save it in memory, much like the presets on a car radio, and you can call it up from then on by selecting the appropriate preset.

As with timer recording, the test models had various methods of tuning. We assessed the ease of tuning on each model and this, combined with an assessment of the ease of setting the clock and basic playback and recording, gave a general ease of use score, given in the table.

The SAMSUNG has a fully automatic tuning feature which automatically scans the television bands for every available station and stores them in consecutive preset numbers. This is a simple method of getting the stations tuned, but it does mean the station number will bear no relation to the preset number it's stored in. If you want channel two on preset two, channel seven on preset seven, etc, you won't be able to use this feature.

PERFORMANCE

Of equal importance to ease of use and programming is the quality of the picture you get out of the videos. So how did this lot stack up? The good news is that they were all good in this respect. We tested them by recording and playing back various images from TV test patterns to daytime soaps, and comparing the picture quality to the original TV image. While we don't expect broadcast quality from a domestic video, we do expect the playback picture to be clear

HOW RELIABLE ARE THEY?

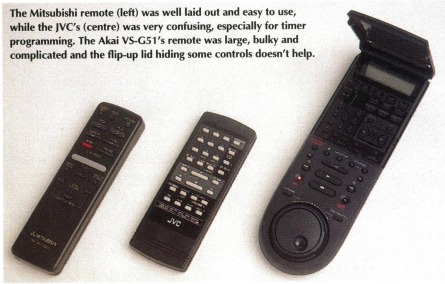
WE ASKED our panel of subscribers who report on the reliability of appliances if their video recorder had needed repair in the past 12 months. The graphs below indicate how well the most popular brands rated in the reliability stakes. On average, just over 20% of videos needed repair in that time, and the average cost for repairs was just under $100.

Brand	% not needing repair
Mitsubishi	94
Philips	89
Toshiba	88
Sony	85
Hitachi	83
Panasonic	82
JVC	81
Akai	77
Sanyo	77
Sharp	77
NEC	75
Teac	75
AWA	71

When we asked our panellists if they'd buy the same brand of video recorder again, we got the following responses:

Brand	% who would buy again
Panasonic	92
Sony	92
Philips	90
Hitachi	88
JVC	88
Mitsubishi	86
Sharp	86
Toshiba	86
Akai	84
AWA	82
NEC	77
Teac	74
Sanyo	72

If you'd like to become a member of our appliance reliability panel, please phone our Consumer Information Service on (02) 559 9855, fax us on (02) 558 9341, or write to us.



The Mitsubishi remote (left) was well laid out and easy to use, while the JVC's (centre) was very confusing, especially for timer programming. The Akai VS-G51's remote was large, bulky and complicated and the flip-up lid hiding some controls doesn't help.

and give accurate colour reproduction. All the models did this, though the **PANASONIC**, **SAMSUNG** and the two **AKAI** models gave a slightly sharper picture than the others.

We also looked at their picture quality while they were in pause mode and while doing a high-speed picture search. All the models produced a clear enough picture.

Another area of performance we looked at was sound. We ran a series of tests to determine the quality of sound reproduction on each model. None of the models tested has the hifi sound capability some of the more expensive videos offer, which can give near CD-quality sound, but we found all of them would be more than adequate through a normal television set.

WHAT TO BUY

equal	**MITSUBISHI** HS-MX3	$560
	AKAI VS-G40	$540
BEST BUY	**SAMSUNG** VB-350	$490

Prices shown are a good target to aim for when shopping around, based on nationwide checks in March 1994.

All the video recorders in this test gave good image quality when it came to recording and playback and we think you'd be happy with any of them from this perspective, but the three models in our *What to buy* list have the edge on the others when it comes to ease of use. All three have a good on-screen menu system which allows easy control of many operations, including programming. They also have reasonably well laid out remote controls which are fairly easy to use and understand.

The **MITSUBISHI HS-MX3** was the easiest to use, but the **AKAI VS-G40** produced a slightly sharper picture. The **SAMSUNG** was a good general performer, and at its target price of $490 becomes our **Best Buy**. Its remote, though rather large, has all the main buttons laid out and marked very well. One criticism of the **SAMSUNG** was that it didn't supply the batteries for the remote control. This may seem a bit picky, but with a product costing almost $500 there's no excuse not to supply a couple of batteries.

The **PANASONIC NV-SD10** gave the best picture quality but was let down slightly by a remote control that was awkward to use at times.

The **AKAI VS-G51** equalled **AKAI VS-G40** in most areas of performance and operated in a similar way, but came with a very large and complicated remote control which was awkward and daunting to use.

Video recorders

	Brand/model (in rank order)	Manufacturer/distributor	Origin	Target price ($)*	1 Number of video heads	2 RF ou
equal	**MITSUBISHI** HS-MX3	Mitsubishi Electric AWA	Malaysia	560	3	VHF
	AKAI VS-G40	Akai	Japan	540	4	VHF
BEST BUY	**SAMSUNG** VB-350	Samsung	Korea	490	4	VHF
equal	**AKAI** VS-G51	Akai	Japan	590	4	VHF
	NEC VN-72	NEC Home Electronics	Japan	580	4	VHF
equal	**SONY** SLV-X37	Sony	Malaysia	590	2	VHF
	PANASONIC NV-SD10	Panasonic	Japan	570	3	VHF
	NEC VN-32	NEC Home Electronics	Japan	490	2	VHF
	SHARP VC-B60	Sharp	Malaysia	560	4	UHF
	PHILIPS VR453	Philips	Malaysia	540	4	UHF
	JVC HR-J400	Hagemeyer	Malaysia	500	4	VHF

* Prices shown are a good target to aim for when shopping around, based on nationwide checks in March 1994.
(A) Has a one-button method of timer programming but start time, stop time, date, etc, all still need to be set.
(B) Can only set recording duration. The recording must be started manually.

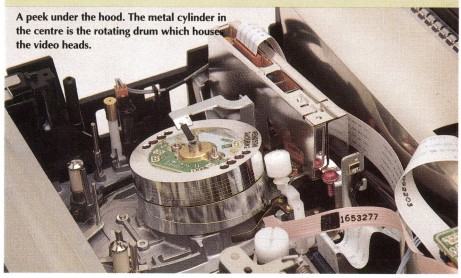
COUNTING HEADS

ONE AREA OF CONFUSION for many prospective video buyers is the fuss made over the number of heads a recorder has. Should you be impressed when the salesperson tells you this one's better because it has four heads? What is a 'head', anyway?

Put simply, a head is a device that reads or writes the magnetic information stored on a video cassette. All video recorders have at least two video heads in a rotating drum which handle all the picture signals during recording and playback. They also have a stationary 'erase' head before the drum that, in record mode, erases anything already on the tape, and another stationary head after the drum that handles the audio or sound signal. When advertisers or salespeople talk about the number of heads in a video recorder they almost always mean the number of video heads in the drum.

Regardless of how many video heads the machine has, it only ever uses two during ordinary recording and playback. The addition of a third or fourth head does not improve the quality of these. A third head can be used to improve the quality of the paused picture or slow-motion play, while a four-head machine can allow long-play recordings to be made and played back (for example, recording for six hours on a three-hour tape). It is possible to get good pause, slow motion and long play on a two-head machine by using some electronic trickery, but there's usually some trade-off in normal picture quality.

Ultimately the value of machines with three or four video heads is dependent on whether these extra or enhanced features are important to you. A good-quality two-head machine will give just as good a picture for ordinary playback and recording.



A peek under the hood. The metal cylinder in the centre is the rotating drum which houses the video heads.

3 Index search	4 Long play	5 Quick timer recording	6 Program method	7 General ease of use score (%)	8 Timer programming score (%)	9 Picture quality score (%)	10 Overall score (%)	Brand/model (in rank order)	
		(A)	menu	72	70	69	70	**MITSUBISHI** HS-MX3	equal
	✓		menu	67	70	72	70	**AKAI** VS-G40	
	✓	*(B)*	menu/direct	70	65	70	69	**SAMSUNG** VB-350	
	✓	✓	menu	62	65	72	67	**AKAI** VS-G51	equal
	✓	*(B)*	menu/direct	65	65	69	67	**NEC** VN-72	
		(B)	menu	63	70	66	66	**SONY** SLV-X37	equal
			set/enter	58	60	73	66	**PANASONIC** NV-SD10	
		(B)	set/enter	60	60	69	65	**NEC** VN-32	
	✓	✓	set/enter	59	60	68	64	**SHARP** VC-B60	
	✓	*(B)*	set/enter	48	55	68	59	**PHILIPS** VR453	
	✓	✓	set/enter	48	35	69	56	**JVC** HR-J400	

Warranties

All the video recorders in this test came with a one-year parts and labour warranty. The **PANASONIC** and the two **AKAI** models allow you to extend this for an additional two years for $30.

1 Number of video heads

All video recorders only need two video heads when recording or playing back at normal speed. Extra heads are only of use in special modes like pause, slow motion or long play, where they can enhance the picture quality. For a full explanation of video heads see *Counting heads*, left.

2 RF out

This column is important if you have an older television. A video recorder can be connected to a television directly through a video line input or via the aerial socket, also known as the RF (radio frequency) input. When connected through the aerial the video appears to the television as an ordinary television channel (either VHF or UHF). If your television cannot pick up UHF signals and does not have audio/video line inputs, it won't be able to recognise the signals from a UHF video like the **PHILIPS** or the two **SHARP** models.

3 Index search

If you record a number of different programs on the one tape, this feature lets you set index markers at the beginning of each program and quickly search for them at a later date. Index markers are automatically set at the start of each recording, but you can manually insert them at any time, allowing a particular scene to be easily located.

4 Long play

Models with this feature can record twice as long on a given cassette. This is done by halving the speed at which the tape is pulled through the machine during recording and playback. Tapes which are recorded in long play cannot be played back on machines which don't have the long-play feature. Many VHS-C compatible camcorders have the long-play feature to lengthen the recording time available on a cassette, so people who own one of these may need a video with this feature to ensure they can play back their home videos.

5 Quick timer recording

Some models allow a simpler form of programming by just letting you set a time for the video to start recording in the next 24 hours on the current channel, and a recording duration. Five models (marked with a *(B)* in this column) let you enter a recording duration but they have to be manually set to record. This is somewhat limited but may be useful if you don't want to record over something later in the tape and won't be around to turn the video off.

The **MITSUBISHI** has an 'OK' programming mode, which allows complete timer programming to be done with a single button. While not really a quick timer record in the sense described above, it does simplify the programming a little.

6 Programming method

All the video recorders in this test are programmed in slightly different ways, but they can be grouped into three general methods, outlined in *Programming* on page 32. The following is a summary:

■ **Set/enter:** Each variable (date, channel, time) is increased or decreased in turn using up and down keys, with the 'enter' key used to move to the next variable.

■ **Menu:** An on-screen menu is used, with four direction keys to set the variables in any order you like.

■ **Menu/direct:** An on-screen menu is used to take you through the programming steps, but once in the programming screen, you enter each item in a set sequence, using the number keys to type in the time, channel, etc, directly.

All the models can be programmed from the remote control.

7 General ease of use

This score includes ease of setting the clock and tuning as well as general use of the video for recording and playback of tapes. The assessment in each area was made taking into account the intuitiveness of the tuning method, the marking and layout of the controls used, the usefulness of the instructions and the readability and usefulness of the display.

None of the units gave us much of a problem when setting the clock or in general use, but the **JVC** and **PHILIPS** had pretty confusing methods for tuning the channels.

8 Timer programming

This is an assessment of the ease with which full timer recording could be done. We found that programming on most of the videos should be reasonably easy to learn once you go through the process a few times. The exception was the **JVC**, which was confusing and has a remote control that is poorly laid out and confusingly marked for programming.

9 Picture quality

The picture quality score is composed of two parts:

■ An 'off-air' picture assessment, where a selection of programs was recorded on each machine and the quality of the recorded picture was assessed by our tester.

■ A more technical video test made by recording various test patterns on each unit and examining the quality of the recording.

The score also includes an assessment of the quality of the 'pause' and 'fast search' pictures.

10 Overall score

The overall score was made up of the above three scores weighted as follows:

■ General ease of use: 30%

■ Timer programming: 20%

■ Picture quality: 50%

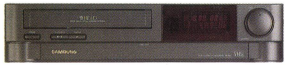
Profiles overleaf

PROFILES

The 12 models tested are listed in rank order. Prices shown are a good target to aim for when shopping around, based on nationwide checks in March 1994. Anything lower is a bargain.

MITSUBISHI HS-MX3

AKAI VS-G40



SAMSUNG VB-350

AKAI VS-G51

NEC VN-72

SONY SLV-X37

PANASONIC NV-SD10

NEC VN-32

SHARP VC-B60

PHILIPS VR453

JVC HR-J400

MITSUBISHI HS-MX3
Target price: $560
Good points
- Easiest to use overall of the models tested.
- Easy to program.
- Easy to read on-screen display.
- Well laid out remote control.
- Good picture quality during pause and fast search.

Bad points
- Does not have long-play feature.

Programming
Uses 'menu' method of programming. The on-screen display is easy to read and understand and shows which keys can currently be used. Arrow keys take you between menu items and increment the various digits. Has the ability to program for the same time every day and every week.

AKAI VS-G40
Target price: $540
Good points
- Good, sharp picture.
- Easy to program.
- Easy to read on-screen display.
- Good picture quality during pause and fast search.
- Has long-play feature.

Bad points
- Fast forward and rewind keys on the remote are quite small.

Programming
Uses 'menu' method of programming. The on-screen display is easy to read and understand and shows which keys can currently be used. Arrow keys take you between menu items and increment the various digits. Has the ability to program for the same time every day and every week.

SAMSUNG VB-350 BEST BUY
Target price: $490
Good points
- Easy to read on-screen display.
- Good picture quality during pause and fast search.
- Has long-play feature.
- Main remote control buttons well marked and laid out.
- Has a fully automatic tuning feature to help with the initial set-up.

Bad points
- Remote is large and bulky, with a slide-down panel which makes buttons underneath (for minor controls) awkward to get at.

Programming
Uses 'menu/direct' programming method. Generally easy to program but can be a little tedious as you must enter the numbers sequentially, and no defaults, such as the current date, are given. The on-screen display is easy to read and understand and shows which keys can currently be used. Has the ability to program for the same time every day and every week.

AKAI VS-G51
Target price: $590
Good points
- Good, sharp picture.
- Easy to read on-screen display.
- Good picture quality during pause and fast search.
- Has long-play feature.

Bad points
- Large, bulky and complicated remote control with flip-up lid which covers the menu, record, numeric and some minor controls and makes programming rather confusing and awkward.

Programming
Uses the 'menu' method of programming. Programming can be done using an on-screen display or the small display on the remote. In either case arrow keys take you between items and increment the various digits. Digits can also be entered directly using the number keys. The on-screen display is easy to read and understand and shows which keys can currently be used. Has the ability to program for the same time every day and every week.

NEC VN-72
Target price: $580
Good points
- Easy to read on-screen display.
- Well marked and laid out remote control.
- Good picture quality during pause and fast search.
- Has long-play feature.

Bad points
- Nothing in particular.

Programming
Uses 'menu/direct' programming method. The on-screen display shows which keys can currently be used and is generally easy to use. Has the ability to program for the same time every weekday and every week.

SONY SLV-X37
Target price: $590
Good points
- Easy to program.
- Good picture quality during pause and fast search.

Bad points
- Does not have long-play feature.
- Layout of remote is slightly cramped and confusing.
- Colours on playback picture appeared slightly darker than the original image.

Programming
Uses 'menu' method of programming. The on-screen display is easy to read but does not provide a list of which buttons to press. Arrow keys take you between menu items and increment the various digits. Has the ability to program for the same time every day, every weekday and every week.

PANASONIC NV-SD10
Target price: $570
Good points
- Best record and playback picture quality of the models tested.
- Good picture quality during pause and fast search.
- Has a barcode scanner for programming, which some people may find useful.

Bad points
- Does not have long-play feature.
- No channel up/down buttons on remote.
- Numeric keys and other minor controls very small and under a flip-open cover.

Programming
This model uses the 'set/enter' method of programming. When programming from the remote, the information is displayed on a small screen on the remote. This model also provides a barcode scanner in the remote which allows the user to program the video by scanning a code sheet provided. Has the ability to program for the same time every day, every weekday and every week.

NEC VN-32
Target price: $490
Good points
- Good picture quality during pause and fast search.

Bad points
- Does not have long-play feature.

Programming
Uses the 'set/enter' method of programming and a small display on the remote control. The digits are entered directly from a set of numeric keys but it's necessary to press an 'OK' button to cycle through the various digit groups. Has the ability to program for the same time every day but can't be set to record at the same time every week.

SHARP VC-B60
Target price: $560
Good points
- Has long-play feature.
- Well laid out remote control.
- Good picture quality during pause and fast search.

Bad points
- Colours on playback picture appeared slightly washed out compared with the original image.

Programming
Uses the 'set/enter' method of programming with the information shown on the front panel display of the video unit. Though not menu-driven, the method was reasonably easy to understand. Has the ability to program for the same time every day and every week.

PHILIPS VR453
Target price: $540
Good points
- Has long-play feature.
- Good picture quality during pause and fast search.

Bad points
- Complicated channel tuning process.
- Has some TV functions on the remote control which can be confused with the video controls, for example changing channels.

Programming
Uses the 'set/enter' method of programming with information displayed on the front panel of the video unit. The method is generally easy to understand but the layout and marking of the programming buttons on the remote are a little confusing. Has the ability to program for the same time every day and every week.

JVC HR-J400
Target price: $500
Good points
- Has long-play feature.
- Good picture quality during pause and fast search.

Bad points
- Confusing to program.
- Layout and marking of the remote are very confusing.
- Complicated channel tuning process.

Programming
Uses the 'set/enter' method of programming with the information displayed on the front panel of the video unit. The programming controls on the remote were poorly marked and the displayed information was difficult to follow. Has the ability to program for the same time every day and every week.

PLUG AND ADAPTOR SAFETY SWITCHES

They're small, convenient, cheap and available on supermarket shelves — but only two out of 10 safety switches tested met our safety and performance expectations.

YOU'VE SEEN the scary advertising: a household appliance has developed an electrical fault, so that when it's turned on it delivers a life-threatening electric shock to the user. Ambulance officers feature prominently in the ads, solemnly administering mouth-to-mouth and cardiac massage to the prone home handyperson.

But they could have been saved the trauma if they'd used an electrical safety switch (sometimes called an earth leakage circuit breaker).

It's a powerful image — and the devices themselves are a great thing — but it's not the full story. First, a safety switch won't protect against all types of power fault. And second, not all safety switches offer the same degree of protection.

With the advent of cheap supermarket safety switches it's easier than ever to afford to buy one, and they're not much larger than a household double adaptor. There's no need to call the electrician, and it's immediate protection.

The performance of six of the 10 models tested left us disappointed. If you want to maximise your protection (in more situations) you should buy the two at the top of our list.

How a safety switch works

First, let's clear up a confusion. A safety switch is not a fuse or overload circuit breaker, which are designed to protect the home against high-current short-circuit or overload faults that might result in fire. The primary aim of a safety switch is to protect people from electrocution.

One of the major causes of electrocution is 'earth leakage' problems in appliances. When an appliance is working properly and safely, electric current flows through the appliance between the *active* wire and *neutral* wire (Figure 1). The circuit is in balance, a closed system.

Should certain faults develop, either in the appliance or elsewhere (wiring or moisture, for example), the appliance may become live. If you touch it, current will flow through you to earth (Figure 2). This is called leakage current. It does pass through the appliance itself (and the kitchen bench, etc) into the ground, but a quicker and easier (less resistant) path may be through the body of a person touching the 'live' appliance. This can cause injury or death.

A safety switch detects the imbalance (due to leaking current) between the active and neutral wires, and shuts off the power (Figure 3) if it detects more than a threshold level of current. This all takes place within 30 thousandths of a second (30 milliseconds) on many units. Someone touching the faulty appliance may still experience a painful electric shock within this brief space of time, but his or her life should be saved.

When a safety switch won't protect

It's important to realise that owning and using a safety switch is not a substitute for good housekeeping practices. Some electrical faults won't trigger a safety switch, and if you touch the active and neutral wires you become part of the circuit.

You can improve your level of pro-

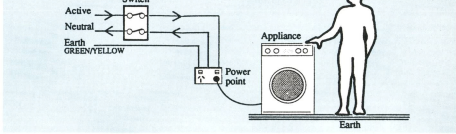


Figure 1. When the appliance is working properly, the circuit is a closed system, with all the current flowing between the active and neutral wires.

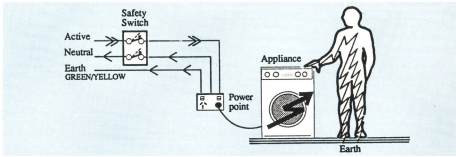


Figure 2. If certain faults develop the appliance may become live, with 'leakage current' flowing to earth — potentially through you.

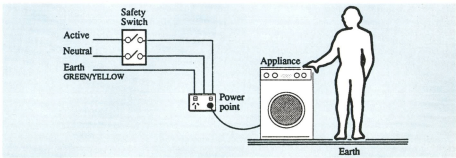


Figure 3. A safety switch detects the imbalance between the active and neutral wires if the situation in Figure 2 occurs, and shuts off the power in a fraction of a second.

tection by having an electrician check the wiring and all power points throughout your home.

Types of safety switch

There are now five types of safety switch commonly available. Each type lends itself to a particular use:

■ **Switchboard:** If you were only to have one safety switch, the best place is on your switchboard, where electric power enters your home. Here it can be placed to operate on all electrical circuits — power points, lights, appliances, electric lawnmowers, etc — and provides the highest level of protection. Some people prefer to put the freezer and fridge on a second circuit, so any tripping of the safety switch on the general circuit will not shut off power to your frozen food.

■ **Power point:** These can be fitted instead of an ordinary power point.

■ **Portable:** Typically these are a board with more than one power point and a built-in safety switch.

■ **Plug:** Now you can get a version which can be wired onto an appliance cord in place of the existing plug. It's a good idea if, say, you've got a power tool you're likely to use in a number of homes or situations.

■ **Adaptor:** Just like a double adaptor, this is a small portable unit which plugs between an appliance and a power point. You can slip it into a small toolbox or even into your pocket, so you've got protection wherever you find yourself.

In this report we bring you results of our tests of 10 plug and adaptor safety switches.

Are they safe? All are acceptable according to the Australian Standard, but two of the 10 stand out.

Where they differ

We subjected the safety switches to a range of electrical safety tests based on the Australian and New Zealand Standards. We tested to find out:

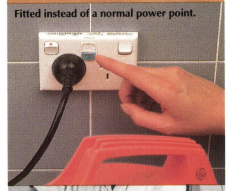
■ **The level of current leakage which would trip the device.** This should not be too high or too low (this would allow nuisance or false tripping). All passed within the required maximum of 30 milliamps and minimum of 15 milliamps.

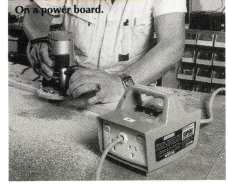
■ **The time taken to trip.** The severity of an electric shock is a function of time as well as current — the quicker it's over the better. We tested the switches with three procedures which require that tripping occur within 40, 150 and 300 milliseconds respectively. All passed.

■ **Tripping time at very high leakage currents.** The Australian Standard doesn't include this test because it was assumed that if a safety switch tripped at very low

Other types of safety switch you can buy or have installed:

On your home's switchboard.


Fitted instead of a normal power point.


On a power board.

levels of current then it would certainly trip at high levels. Wrong! Late last year, HPM Industries recalled part of the **Electresafe 5000** range of portable safety switches due to a fault which meant they didn't offer complete protection from earth fault currents above 2.5 amps (a very high leakage current).

The **HPM 5030** was the only unit which failed this test, and it turned out to be within the serial number range of the recalled units. A later sample passed.

■ **Resetting.** When a safety switch has tripped, will you remember to check the appliance or circuit for any electrical fault? Some switches are reset manually, by the pushing of a button; this can be done even when the power is off. If you then turn on the power switch — while the faulty appliance is still attached (perhaps with your hand resting on the 'live' toaster) — there may be an extra period of time (a few milliseconds) before the safety switch trips again. This is because it may take a moment for power to flow through the safety switch and bring its circuit into full operation.

Our results show that, despite this design, all switches of this kind retripped within the allowable time limit (150 milliseconds).

In contrast, the **HPM** and **PDL** models can only be reset electrically, while the power switch is on. This means they are fully operational before any power flows through them and into the faulty appliance.

■ **Withstanding short bursts of high voltage.** Lightning, for example, can cause a safety switch to trip unnecessarily. To deal with this problem, most switches are equipped with a filtering device to distinguish these voltage 'spikes' from hazards.

All but the **CLIPSAL 463RC30, HPM 5030, HPM 5100** and **PDL 951** failed our voltage spike test — three short pulses at 1 kilovolt (kV), 1.5 kV, 2 kV, 2.5 kV and 3 kV. The **BODYGUARD** plug-style safety switch arced during testing and ruptured a component (a varistor used to reduce nuisance tripping). Normal operation of the safety switch was not impaired, only its ability to filter out further high-voltage spikes.

In other words, you're not put at risk by this failure, but the switches which passed are more likely to give you satisfactory performance.

A further test of this nature was included to simulate other power disturbances which can occur around the home, such as effects coming from fluorescent lamp starters or the starting up of a fridge motor (creating damaging voltage transients, or 'noise' on the line). All the switches passed.

■ **Fail safe test.** It's possible for a power point or plug to have incorrect wiring yet still provide power and appear to work properly. A common fault is to have the active and neutral wires reversed — most likely by an incompetent home handyperson. What happens is this: when you turn off the power point you are disconnecting the neutral instead of the active — so the power point and your appliance remain live, but some safety switches will also have turned off when you switched off the power point.

Other safety switches 'fail to safe', meaning they will disconnect power from your appliance when you turn off the power point, whether it's wired correctly or not. This is a real benefit.

Only the **HPM 5100** and **PDL 951** passed the 'fail safe' test — results are in the table overleaf (column number 2). The **HPM 5030** eventually tripped, but it took 350 milliseconds.

Why is this so? The short answer is the

Plug and adaptor safety switches

Brand/model (in alphabetical order within groups)	Manufacturer/ distributor	Origin	Price paid ($)*	Type	1 Passed basic performance tests	2 Passed additional 'fail safe' test
BEST PROTECTION						
HPM 5100	HPM	not stated	37	Plug	✓	✓
PDL 951	PDL	New Zealand	39	Adaptor	✓	✓
OK						
CLIPSAL 463RC30	Gerard Industries	not stated	40	Adaptor	✓	
HPM 5030	HPM	not stated	75	Adaptor	✓	
NOT RECOMMENDED						
BODYGUARD PARCD10/RB	RingGrip	not stated	35	Adaptor		
BODYGUARD PTRCD10/RB	RingGrip	not stated	30	Plug		
CLIPSAL 418RC	Gerard Industries	not stated	30	Plug		
CLIPSAL 463RC	Gerard Industries	not stated	35	Adaptor		
KAMBROOK SG 20	Kambrook	China	25	Plug		
KAMBROOK SG 30	Kambrook	China	35	Adaptor		

* Prices shown are those we paid in July–August 1993.

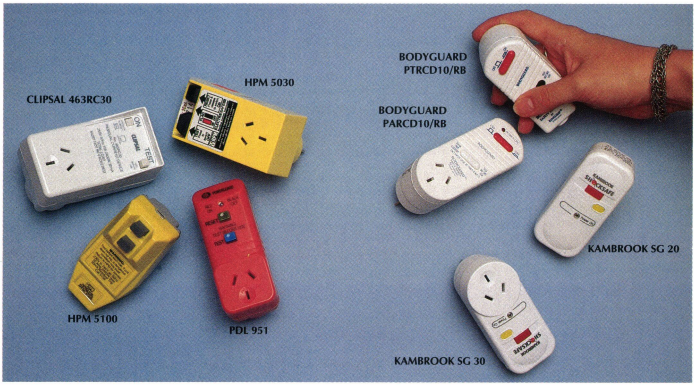
Basic performance tests

1 Our testing went further than the Australian Standard 3190-1990. Included were the level of tripping current, time taken to trip, tripping time at high leakage currents, and a test which applied short bursts of high voltage. Additional tests were performed to detect susceptibility to false or nuisance tripping. The models without ticks in this column failed this nuisance tripping test.

Additional fail safe test

2 This test is required in New Zealand and is under discussion for the International Standard. See *Fail safe test* on page 39 for details.

Note: the **BODYGUARD PARCD10/RB** and **CLIPSAL 463RC** are identical; so are the **BODYGUARD PTRCD10/RB** and the **CLIPSAL 418RC.**



Australian Standard doesn't require this protection. In contrast, this test *is* part of the New Zealand Standard and is under consideration by the International Electrotechnical Commission (IEC). Adoption of the fail safe test within Australia is currently under discussion. However, its inclusion has been delayed primarily due to opposition from manufacturers who claim it will push up the cost of safety switches. The prices we found indicate this is not a sound argument. A decision is expected this year.

Conclusion

We've rated the **CLIPSAL 463RC30** and **HPM 5030** as 'OK', as they passed our tests based on sections of the Australian Standard plus the nuisance tripping tests.

However, the real point is you can do better for much the same money. The **HPM 5100** and **PDL 951** also satisfy the additional important 'fail safe' test. They offer safety in a greater range of circumstances than the others.

Finally, remember to check your safety switch regularly. It will have a test button for this purpose. It's possible a safety switch may develop a fault and won't trip when there's a current leakage.

WHAT TO BUY

(in alphabetical order)	
HPM 5100 (plug)	$37
PDL 951 (adaptor)	$39

Prices shown are those we paid in July–August 1993.

IRONS

Many irons now have fancy features, but for our trialists reliable steam and heat were more important.

IF YOU'RE PARTING WITH $60 to $80 for an iron, you should be able to expect more from it than previous generations who had to heat up their irons on a wood stove. You want it:

- To be reasonably light and comfortable to use so you don't end up with a sore wrist.
- To get wrinkles out of your delicate synthetic and tough linen garments alike — without your needing an additional water sprinkler.
- To have a soleplate that glides smoothly and is easy to keep clean.
- To have button slots, grooves or a thin edge with which you can manoeuvre around buttons.

Not all the irons we tested fulfilled all of the above, but all had either a shot of steam or water spray for help with stubborn creases — most had both; most had adjustable steam volume and some had a special self-cleaning switch. And some manufacturers are now offering more features for improved safety and energy efficiency.

NEW FEATURES

■ The **BLACK & DECKER Ultra Steam 2000**, the **KAMBROOK KI 600 Sensor** and the **PHILIPS Comfort 400** have an auto cut-off feature which automatically switches off the iron if it's left on for a certain time without moving. This feature might come in handy for those who do other things while ironing. If the movie is just too exciting and you're not moving the iron while it's resting on the soleplate, it switches itself off.

On the three irons with auto cut-off, it was activated after about 30 seconds when they were left on their soleplates. While that may still be long enough to scorch some clothes, it's designed to prevent the iron from starting a fire. On the **PHILIPS Comfort 400** it took about two minutes for the auto cut-off to activate when the iron was *first* switched on, but only about 32 seconds when it had already heated up.

If you're called away to the phone and leave the iron resting on its heel, the auto cut-off switches the iron off after about six to 11 minutes in an upright position. And there's no need to turn it on again when you return; it's reset by movement.

■ The **KAMBROOK** was the only iron with an energy saver — a feature which reduces the iron's power consumption. It seems to work by keeping the iron at a lower temperature when it's in a vertical position, thus switching on the thermostat less often. When we tested it, a green 'energy saver' light came on after about two minutes in an upright position. Movement to the horizontal position automatically returned it to full energy consumption.

You can save some energy with this model if you frequently leave your iron on while you put clothes away, for example. However, the amount saved — of energy and money — may be negligible. After six minutes on its heel, the iron's auto cut-off turns off the power supply anyway, so the energy-saving time is limited. Remember also you might need to allow a minute or so before ironing the next item if the iron has cooled down.

A water spray helps iron out stubborn creases, but not having one wasn't enough to make our trialists downgrade an otherwise good iron.

WHAT WE BOUGHT

WE AIMED TO TEST all steam irons currently available in the medium to high price range (retailing for $60 to $80) and ended up with 11 to test and a further four similar models to report on. When a brand had more than one model available within that price range, we chose to test the one with most features, and have listed otherwise technically comparable models in the table notes. We considered irons with different soleplates to be technically different.

We didn't test models exclusive to Retravision and Vox; K Mart and Ronson released their new models too late for inclusion in our tests; and Breville, Linda, Panasonic and Tiffany had no irons that fitted our purchase criteria.

SOLEPLATES: A STICKY SUBJECT

Just as fried eggs don't stick in a non-stick frying pan, you could assume that irons with non-stick soleplates glide better on delicate fabrics and make ironing easier. However, only about half the irons we tested had a non-stick soleplate. With a variety of different soleplate types on the market, manufacturers seem to cater to consumers' individual preferences.

According to Black & Decker, SilverStone soleplates weren't introduced to make irons glide better but to prevent the build-up of material such as starch on the soleplate. To clean a non-stick soleplate, a soft cloth and warm soapy water will do, or wipe it with a soft dry cloth after each use. And take care not to run your iron over zips, metal buttons or studs, as non-stick coatings soften at high temperatures and are more likely to scratch off.

Sunbeam claims the advantage of SilverStone and similar non-stick coatings over metal or ceramic surfaces is their ability to iron synthetic fabrics at various temperatures. Because the iron surface doesn't stick, you can generally iron at a higher temperature with less risk of damaging the fabric. On the other hand, Sunbeam's tests have shown that ceramic, chrome and stainless steel surfaces are more durable than non-stick and aluminium ones, but they also stick more frequently on certain fabrics. On the models we bought, the chrome-plated soleplates of the **MOULINEX** irons tended to drag on synthetic fabric when they overshot their set temperature when first switched on, but trialists rated them reasonably once the temperature had settled down.

Tefal's 'Ultraglide' soleplate is made from 'durilium'-coated aluminium, which gives it a glass-like finish — less susceptible to scratches, according to the manufacturer. It also has fine ridges that are claimed to be better for gliding ability, which our trial confirmed. To clean the Ultraglide soleplate, let your iron cool slightly, rub it with a moist plastic scouring pad and wipe clean with a dry cotton cloth.

The results of our trial indicated that the soleplate coating made little difference to the smoothness with which an iron could be moved. The traditional uncoated or polished aluminium surface, if properly cared for, offers good gliding ability and very even heat distribution. Clean it regularly with a soft cloth and a non-abrasive household cleaner.

Which water?

When you're choosing which kind of water to use in your steam iron, follow the manufacturer's recommendations, as they do vary. **All the irons we tested can be used with ordinary tap water.** However, for use in a hard or very hard water area, manufacturers' views differ. They recommend:

- Demineralised water (Black & Decker, Braun, Sunbeam). According to Black & Decker, commercially available demineralised water still has some minerals left in it, which will maintain the iron's steaming performance better than distilled water.
- Distilled water (Kambrook, Moulinex, Philips, Sunbeam).
- Softened or filtered water (Kambrook, Braun).
- A mixture of half tap and half distilled water (Braun).

You can buy demineralised and distilled water from some larger supermarkets.

On the other hand, the Tefal instructions stipulate quite clearly *only* to use cold, untreated tap water. They particularly advise against the use of demineralised, de-ionised, distilled or mineral water, battery top-up fluid, water obtained from defrosting the fridge, water from water softeners or boiled water which has been cooled. While these waters may not cause scaling, according to Tefal they can contain micro-impurities or chemical substances which form a deposit in the iron and can cause brown stains on laundry.

WHAT TO BUY

(In rank order as assessed by our trialists)

	PHILIPS Comfort Plus 210 HD 1512	$65
	BLACK & DECKER Sure Steam 400 IR40	$60
equal	**SUNBEAM** Pro-steam 310	$60
	SUNBEAM Pro-steam 315	$70
	BRAUN 5000 Super PV52	$80
	BLACK & DECKER Ultra Steam 2000 IR60	$85

Prices shown are a good target to aim for when shopping around, based on nationwide checks in February 1994.

WHEN YOUR IRON FALLS OFF THE BOARD ...

ACCORDING TO SUNBEAM, an iron should last about 20 years if you iron for $2\frac{1}{2}$ hours a week, but inappropriate storage (it should be stored without water and upright) will affect its lifespan. However, as most irons are probably replaced because they get damaged in an accidental fall, we decided to subject them to a drop test — after the technical tests and the trial, of course — to see which ones were made to last.

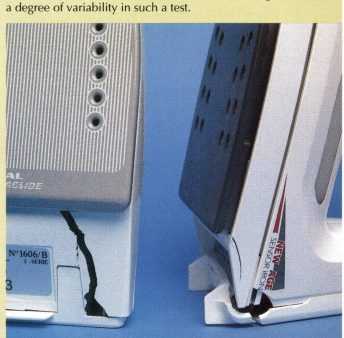
We placed the irons on their heels, about 2.5 cm from the edge of the ironing board, with their cords hanging freely behind them to the ground. We then pushed the ironing board just hard enough on one corner until the iron swayed, toppled over and dropped to the carpeted floor.

To help an iron survive falls from an ironing board, Sunbeam says it now constructs handles from impact-resistant polycarbonate — and its two models were indeed two of the eight irons that survived our drop test unscathed. (The others were the two **BLACK & DECKER**s, the **BRAUN**, the two **MOULINEX** models and the **PHILIPS Comfort 400**.) All of these had no visible signs of breakage and didn't rattle after three drops.

The **KAMBROOK** and the **TEFAL** broke badly enough that you wouldn't want to use them again. The **PHILIPS Comfort Plus 210** suffered very minor damage, probably not enough to stop you from using it again.

The plastic handle is not the only part of the iron that can break in a fall. There's the thermostat setting, the steam dial, the water tank, the spray nozzle — and that's only on the outside; inside, of course, the thermostat can shatter. If your iron takes a fall and you can see, hear or suspect any damage, have it checked before you use it again.

We carried out the drop test as we believe an iron should be designed to survive a fall from the ironing board. However, we didn't include the results from this test in our ratings, as there's a degree of variability in such a test.



The Tefal (left) and the Kambrook — both broke badly enough in a fall from the ironing board that you wouldn't want to use them again. Other models survived.

Irons are listed in rank order. Prices shown are a good target to aim for when shopping around, based on nationwide checks in February 1994. Anything lower is a bargain.

THE BEST

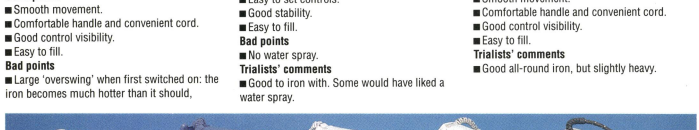
PHILIPS COMFORT PLUS 210 HD 1512
Target price: $65
Good points
■ Good steam and water spray.
■ Smooth movement.
■ Comfortable handle and convenient cord.
■ Good stability.
■ Easy to fill.
Bad points
■ No shot of steam.
Trialists' comments
■ Good performance, but somewhat heavy.

BLACK & DECKER SURE STEAM 400 IR40
Target price: $60
Good points
■ Smooth movement.
■ Comfortable handle and convenient cord.
■ Good control visibility.
■ Easy to fill.
Bad points
■ Large 'overswing' when first switched on: the iron becomes much hotter than it should, though we didn't find it damaged acetate fabric and our trialists didn't seem to notice a problem.
Trialists' comments
■ Steam, spray and shot of steam controls somewhat inconvenient to use.

SUNBEAM PRO-STEAM 310
Target price: $60
SUNBEAM PRO-STEAM 315
Target price: $70
The only difference between the two Sunbeams is the soleplate: the 310's is aluminium, the 315's SilverStone-coated.
Good points
■ Good shot of steam.
■ Smooth movement.
■ Comfortable handle and convenient cord.
■ Easy to set controls.
■ Good stability.
■ Easy to fill.
Bad points
■ No water spray.
Trialists' comments
■ Good to iron with. Some would have liked a water spray.

BRAUN 5000 SUPER PV52
Target price: $80
Good points
■ Good steam and shot of steam.
■ Smooth movement.
■ Easy to set controls.
■ Easy to fill.
■ Top iron in our 'prospective purchase' question: the most trialists indicated they'd be very likely to buy this iron.
Trialists' comments
■ Sprayed a bit far ahead. Some disliked the control markings.

BLACK & DECKER ULTRA STEAM 2000 IR60
Target price: $85
Good points
■ Smooth movement.
■ Comfortable handle and convenient cord.
■ Good control visibility.
■ Easy to fill.
Trialists' comments
■ Good all-round iron, but slightly heavy.



THE REST

PHILIPS COMFORT 400 HD 1494
Target price: $80
Good points
■ Good water spray.
■ Comfortable handle and convenient cord.
■ Good control visibility and setting.
■ Good stability.
■ Easy to fill.
Bad points/trialists' comments
■ No shot of steam, which some trialists would have liked.

MOULINEX VARIO JET CHROM PLUS 236
Target price: $90
Good points
■ Good steam and water spray.
■ Good stability.
■ Easy to fill.
Bad points
■ Large temperature overswing — and in this case acetate fabric *was* damaged in lab tests, although trialists didn't comment on this.
■ Control visibility not considered as good as on most other models.
Trialists' comments
■ Good at steaming, but shot of steam is noisy and not very effective.

MOULINEX CHRONO JET SPC CHROM PLUS D 16
Target price: $80
Good points
■ Smooth movement.
■ Good stability.
■ Easy to fill.
Bad points
■ Control visibility not considered as good as on most other models.
■ Slight temperature overswing — acetate fabric was damaged when we tested it in the lab, although trialists didn't comment on this.
Trialists' comments
■ Steam control somewhat difficult to use.

TEFAL ULTRAGLIDE VARIO STEAM 1606
Target price: $80
Good points
■ Smooth movement.
Trialists' comments
■ Glides easily, but handle and cord somewhat awkward.

KAMBROOK KI 600 SENSOR
Target price: $75
Bad points
■ Didn't get hot enough according to the Standard (it reached only 185°C instead of 200°C), and our trialists generally rated it lower than other irons for ironing linen.
■ Smoothness of movement not considered to be as good as with the other models.
■ Rather hard to fill.
■ Trialists indicated they'd be somewhat unlikely to buy this iron.
Trialists' comments
■ Hard to fill, and tended to drag while ironing.

Steam irons

Brand/model (in rank order)	Manufacturer/ distributor	Origin	Target price ($)*	Warranty (years)	Soleplate	1 Adjustable steam volume	2 Shot of steam	3 Spray	Self-cleaning
THE BEST									
PHILIPS Comfort Plus 210 HD 1512	Philips	Singapore	65	1 *(A)*	SilverStone	✓	■	✓	✓
BLACK & DECKER Sure Steam 400 IR40	Black & Decker	Singapore	60	1 *(B)*	Aluminium	✓	✓	✓	
equal **SUNBEAM** Pro-steam 310	Sunbeam	Australia	60	1 *(B)*	Aluminium	✓	✓		
SUNBEAM Pro-steam 315	Sunbeam	Australia	70	1 *(B)*	SilverStone	✓	✓		
BRAUN 5000 Super PV52	Braun	Spain	80	1 *(C)*	Aluminium	✓	✓	✓	
BLACK & DECKER Ultra Steam 2000 IR60	Black & Decker	Malaysia	85	1 *(B)*	SilverStone	✓	✓	✓	
THE REST									
PHILIPS Comfort 400 HD 1494	Philips	Singapore	80	1 *(A)*	SilverStone	✓		✓	✓
MOULINEX Vario Jet Chrom Plus 236	Mobex	France	90	1 *(B)*	Aluminium/chrome-plated	✓	✓	✓	✓
MOULINEX Chrono Jet SPC Chrom Plus D 16	Mobex	France	80	1 *(B)*	Aluminium/chrome-plated		✓	✓	✓
equal **TEFAL** Ultraglide Vario Steam 1606	Zyliss	France	80	1 *(B)*	Ultraglide	✓	✓	✓	✓
KAMBROOK KI 600 Sensor	Kambrook Distributors	Australia	75	1 *(C)*	Non-stick		✓	✓	*(E)*

* Prices shown are a good target to aim for when shopping around, based on nationwide checks in February 1994.
(A) Parts and labour.
(B) Replacement.
(C) Repair or replacement.
(D) No specific button or switch; uses shot of steam.
(E) Also has 'auto stop' indicator.
(F) Also has 'energy saver on' indicator.

FOR PEOPLE WITH DISABILITIES

AN OCCUPATIONAL THERAPIST from the NSW Independent Living Centre assessed the irons for use by people with disabilities.

All have good-sized, rounded handles. On all but the **PHILIPS Comfort 400** the swivel cord for left- and right-hand use stays out of the way. Most are well balanced and just right in weight to handle comfortably, although the **BLACK & DECKER Ultra Steam 2000** and the **MOULINEX Vario Jet** — at 1.6 kg when filled with water — were judged a bit heavy for use by people with some disabilities. (The other models only weigh slightly less, from 1.2 to 1.5 kg filled.)

The therapist also looked at the markings and controls — how easy they are to read and to adjust; how well you can see indicator lights; and how easy it is to fill the tank and see the water level. Most irons were generally quite easy to use, but if you're looking for that added bit of comfort and convenience, go for either of the two **BLACK & DECKER**s, the **MOULINEX Vario Jet**, the **PHILIPS Comfort Plus 210** or one of the two **SUNBEAM**s, which were rated best for use by people with disabilities.

FAULTY WHEN BOUGHT?

WHEN WE COLLATE our test results we always give manufacturers an opportunity to comment on their product's performance. In this instance three of them — Braun, Black & Decker and Sunbeam — queried some of their poor results in our technical tests, suggesting the samples we'd bought must have been faulty.

Three faulty models out of only 11 in total seemed a lot to us, and we started to wonder about the quality control at some of these manufacturers if their claims were true. We bought new samples of each of the three models and retested them in the lab: the new **SUNBEAM Pro-steam 310** just passed the test it had previously failed, while the **BLACK & DECKER Sure Steam 400** again became far too hot in the 'initial overswing' test (see *Points of note* opposite). On the other hand, the new **BRAUN 5000** easily passed the soleplate temperature test this time and did better in other technical tests as well, indicating that our original sample's thermostat could indeed have been faulty.

However, our trialists didn't find these technical problems reflected in performance — they rated all three irons highly. This also highlights our concern that the present irons Standard doesn't reflect reality very well (see *Points of note*), and illustrates why we use trialists to rate our irons rather than the technical tests defined in the Standard. Perhaps the industry needs to get its act together on both the Standards it works to and the number of 'faulty' irons it seems to produce.

Comparable models

■ According to the manufacturer, the **BLACK & DECKER Ultra Steam 2000 IR60** tested is technically the same as the **BLACK & DECKER Ultra Steam 1000 IR50**, which has a self-cleaning setting but no auto cut-off.

■ According to the manufacturer, the **KAMBROOK KI 600 Sensor** tested is technically the same as the **KAMBROOK KI 500**, which has no auto cut-off sensor, and the **KAMBROOK KI 450**, which has neither auto cut-off nor energy saver function.

■ According to the manufacturer, the **PHILIPS Comfort 400 HD 1494** tested is technically the same as the **PHILIPS Comfort 300 HD 1493**, which has no auto cut-off.

1 Adjustable steam volume

This allows you to adjust the volume of steam to suit the dryness level or type of fabric.

2 Shot of steam

Most of our trialists considered a shot or burst of steam quite important. The two **PHILIPS** models lack this feature, but they did not drop in their ratings when the trialists went from synthetics to cotton and linen.

3 Spray of water

All but the **SUNBEAM** models have a spray of water. As with a shot of steam, this feature can be quite effective at getting rid of stubborn creases, especially on very dry linen and cotton. For these fabrics, our trialists rated the two **SUNBEAM** models generally lower than for synthetics.

4 Self-cleaning

A self-cleaning feature is claimed to flush out mineral residues and thus prevent

	6	7	8	
	Button slots	Other features	Overall score (%)	Brand/model (in rank order)
				THE BEST
ermostat on	Thin edge		84	**PHILIPS** Comfort Plus 210 HD 1512
wer on	✓	Long 3 m cord	83	**BLACK & DECKER** Sure Steam 400 IR40
wer on	Thin edge	Removable steam valve, safety thermal fuse, long 3 m cord	83	**SUNBEAM** Pro-steam 310 equal
wer on	Thin edge	Removable steam valve, safety thermal fuse, long 3 m cord	83	**SUNBEAM** Pro-steam 315
ermostat on	Thin edge	Safety thermal fuse	82	**BRAUN** 5000 Super PV52
wer on	Thin edge	Auto cut-off, extra-long 4 m cord	81	**BLACK & DECKER** Ultra Steam 2000 IR60
				THE REST
ermostat on *(E)*	Thin edge	Auto cut-off	79	**PHILIPS** Comfort 400 HD 1494
ermostat on			78	**MOULINEX** Vario Jet Chrom Plus 236
ermostat on			76	**MOULINEX** Chrono Jet SPC Chrom Plus D 16 equal
ermostat on		Safety thermal fuse	76	**TEFAL** Ultraglide Vario Steam 1606
ermostat on *(F)*	Thin edge and button grooves	Auto cut-off, energy saver	72	**KAMBROOK** KI 600 Sensor

them from hardening and clogging the steam holes. Of the irons without this feature, only the **KAMBROOK** advised owners to use the shot of steam for self-cleaning.

The **BLACK & DECKER**, **BRAUN** and **SUNBEAM** models have no special self-cleaning provisions. Sunbeam believes attempts to flush out deposited minerals are largely unsuccessful and has designed its irons with a large internal steam-generating area which, it claims, will comfortably collect minerals from at least 2500 hours of ironing with tap water.

5 **Indicator light**

All the irons tested have an indicator light; on the **BLACK & DECKER** and **SUNBEAM** models, however, it only indicates 'power on'. So look for another model if you prefer a thermostat indicator, which comes on when the iron is heating and goes off when the desired temperature has been reached.

6 **Button slots**

On modern irons we'd expect some provision for ironing around buttons; where present, sometimes it was just a thin edge, sometimes actual grooves.

7 **Other features**

■ **Safety thermal fuse:** The **BRAUN** and the **SUNBEAM** irons have a built-in safety thermal fuse which stops a faulty iron from overheating. If there's a failure in the thermostat, the safety fuse is claimed to stop the electric current before the iron gets dangerously hot.

■ **Removable steam valve:** On the **SUNBEAM** irons the steam valve can be removed for cleaning.

■ **Auto cut-off:** The auto cut-off feature automatically switches off the iron if it's left on for a certain time without moving. That's usually after about 30 seconds in the ironing (horizontal) position and six to 11 minutes in the resting (vertical) position. See *New features* on page 41 for more information.

■ **Energy saver:** The **KAMBROOK** was the only iron with an energy saver, which reduces the iron's power consumption when it's left in a vertical position. See *New features* for more details.

8 **Overall score**

To find out how the irons performed we brought in a mix of 14 people who ironed occasionally, regularly or professionally. Each tried every iron on fabric and garments made from nylon, cotton, denim and linen. For the performance score, we asked them how well each iron got creases and wrinkles out of the different fabrics, how well it steamed and how smoothly it moved over the fabrics. The trialists also rated handle comfort, cord placement, weight and stability, and commented on the controls, how accessible they were and how easy the water tank was to fill. The overall score combines all these factors. Finally they commented on how likely they would be to buy each iron if it were on sale at a reasonable price.

Points of note

■ All the irons passed our electrical safety tests according to the relevant Australian Standard. We also carried out technical tests according to Australian Standard AS1805-1975 — and some additional tests, as the Standard seems rather outmoded. It has not been significantly updated during a period which has seen the introduction of many important features, such as adjustable steam rate, shot of steam and water spray. There's no uniform way of testing these features according to the Standard, which is one reason we ask trialists to rate them.

■ **Initial overswing test:** If you have a basket of ironing to get through, you probably start with the most sensitive fabrics and turn the iron to a higher temperature setting later as you get to the cottons and linens. When the thermostat initially cuts out after switch-on, it's best to start on an inconspicuous part of the garment or wait for a minute or so, as many irons initially exceed the preset temperature. This is called 'initial overswing' and is considered acceptable according to the Standard if it doesn't exceed a 120°C setting by more than 40°C, measured at the hottest point on the soleplate.

Four of the irons tested failed this test: the two **MOULINEX** models, the **BLACK & DECKER Sure Steam 400** and the **SUNBEAM Pro-steam 310**, though a second sample of the last just passed when tested later (see *Faulty when bought?* opposite).

■ **Scorch test:** To test whether overswing actually damages clothes, we set these four irons to the synthetics setting, starting from cold. When the thermostat cut out, we ironed a piece of acetate for about 15 seconds. The two **MOULINEX** models with chrome-plated soleplates permanently crinkled the fabric and you'd probably regard your garment as damaged if it happened to you — though it didn't happen to any of the trialists. Interestingly, the **BLACK & DECKER Sure Steam 400** and the **SUNBEAM Pro-steam 310** models — both with aluminium soleplates — became much hotter in the initial overswing test but left no marks on the fabric.

WHAT DO YOU KNOW?

1 If a stockbroker becomes insolvent, the law governing share investments in Australia doesn't offer any form of protection or compensation to clients to whom the broker may owe money.
True or false?

2 The Australian stockmarket is considered unique for which of the following reasons:
A) Private investors rather than institutions dominate the market.
B) It isn't very susceptible to the movement of foreign money into and out of the country.
C) It is unable to absorb large-scale buying or selling without the market experiencing violent fluctuations.

3 Fertilisers, explosives, paints and detergents are all made using which of the following?
A) Sulphuric acid.
B) Recycled materials.
C) Ascorbic acid.

4 How many lakes in Canada are dead from acid rain?
A) 14
B) 140
C) 1400
D) 14 000

5 Scientists have recently discovered that some of the sulphur compounds found in onions may be useful in treating asthma.
True or false?

6 The DTP (or three in one) injection for infants gives immunity against which three diseases?
A) Diphtheria, whooping cough and tetanus.
B) Tetanus, polio and measles.
C) Polio, measles, diphtheria.
D) Meningitis, mumps, rubella.

7 Haemophilus Influenza Type B (HIB) is a bacterium capable of causing which of the following types of illness, mainly during the first four years of a child's life:
A) Meningitis.
B) Epiglottitis.
C) Arthritis.
D) All of the above.

8 Which of the following products may contain radioactive materials?
A) Heart pacemakers
B) Smoke alarms
C) Notebook computers

9 Which of the following foods are complete proteins; that is, they contain all the essential amino acids?
A) Grains, like rice, corn or barley.
B) Baked beans, kidney beans and chickpeas.
C) Milk, yoghurt, cheese.
D) None of the above.

10 What percentage of Australian rainforests has been destroyed since European settlement?
A) 2%
B) 25%
C) 50%
D) 75%

ANSWERS

1. False. There is a National Guarantee Fund constituted under the Corporations Law to provide protection for sharemarket investors in respect of brokers who become insolvent. The fund is administered by the Securities Exchanges Guarantee corporation.

2. C. A and B are false. In fact, because Australia has a very small stockmarket, contributing less than 2% to the world equity market, it is very susceptible to the movement of foreign currency. Institutions make up 85% of investors on the market, whereas individuals represent only 15% of participants.

3. A. In fact many of the items we use every day wouldn't exist without sulphuric acid. It doesn't occur naturally but has to be manufactured using sulphur, water and air.

4. D, and it is estimated that some 40 000 more are dying. Acid rain is not a big problem in Australia yet but it could worsen. Conserving energy is the best preventative measure.

5. True. And in case you were wondering, it's those same sulphur compounds that act with oxygen when an onion is cut to form strong-smelling chemicals that cause your eyes to water.

6. A. The DTP is given as a single injection which works as effectively as three separate ones and hurts less. Consult your doctor or local baby health care clinic about when babies should receive their DTP. (The P stands for pertussis, the clinical name for whooping cough.)

7. D. A considerable number of deaths and permanently damaged children have resulted from HIB infection. Fortunately a vaccine has been available in Australia since 1992.

8. A and **B.** Heart pacemakers contain nuclear batteries because they last longer than ordinary batteries. Many smoke alarms have a weak radioactive source. Its rays split the atoms inside the alarm chamber into ions, making them emit a slight electric current. If smoke enters the chamber, it disturbs the ions and reduces the current, which is sensed by a microchip that triggers the alarm.

9. C. These are complete proteins, in addition to meat, fish, poultry and eggs. The other foods listed are incomplete protein foods but they are still valuable sources of protein, particularly for vegetarians.

10. D. That's an estimated 20 billion trees since 1788. The remaining patches would cover an area of 20 000 square kilometres, the equivalent of a circle 160 kilometres in diameter.

RECALLS AND BANS

If you find a recall not in our list, please let us know.

Tree Toys has recalled WOODEN MAGNETIC TRAINS with PLAYSCHOOL, FARM ZOO or AUSTRALIAN ANIMAL CHARACTERS as they contain one or more small pieces which may be a hazard. Take the trains away from children three years and under. Return to retailer or to Tree Toys directly, 49 Oakdale Road, Gateshead 2290, or call 008 025 270.

Poolrite Equipment has recalled SALT CHLORINATOR SURECHLOR 2000 models HC 100, HC 150, HC 200 and HC 300 (approval number NJ12379). If water gets in the product may become electrically unsafe. Call Poolrite Equipment on 008 068 026 for free repair. Earlier models repaired between July 1993 and February 1994 may also be affected.

Breville has recalled BREVILLE DOOR CHIME PIC 1 as it says a failure of an internal component may "startle" the user. Only the chimes with a yellow/amber indicator light are affected. Return chime and button controller with your name and address to Free Post Reply Paid No. 5, Breville, 149 Pyrmont Street, Pyrmont 2009. A replacement door chime will be sent free-of-charge on receipt by Breville.

Apollo Australia has recalled APOLLO PRESTIGE 'BALANCED' REGULATORS and BUOYANCY COMPENSATORS (identified by removable pockets with a horizontal stripe) purchased between August 1993 and February 1, 1994. There may be leakage due to a hose crimping fault. Return to your nearest Apollo dealer or retailer for hose replacement or call Apollo on (02) 319 6866.

CHOICE

The magazine of the Australian Consumers' Association ACN 000 281 925

"We work on behalf of Australian consumers by producing and providing useful and accessible information, and representing and advancing their interests."

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Marketing statistics by GFK Marketing Services Pty Ltd

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(T) test
(D) includes assessment of suitability for people with disabilities
(U) update of previous report
*** additions or corrections to reports, small follow-up items, or letter**

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ISSN 0009 496X Print post approved PP224733/00035
Wholly printed in Australia by Wilke Color, 37–49 Browns Road, Clayton 3168 in 1994 for the publisher, Australian Consumers' Association, 57 Carrington Road, Marrickville 2204.